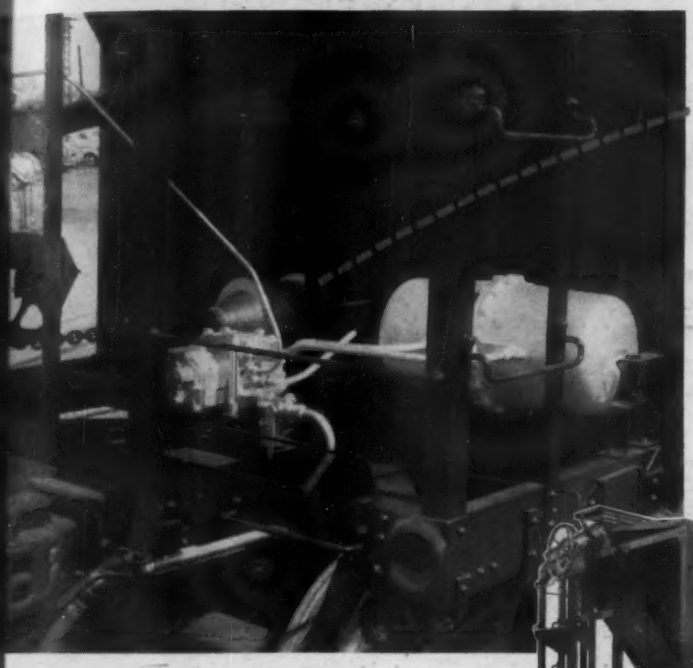
OCTOBER 5, 1946

Railway Age

Founded in 1856

5 Copy 10 46



A "Stand-out" in durable AB installations

Byers Wrought Iron Brake Pipe

As part of a new car building program, the Erie Railroad recently ordered 700—50-ton Box Cars, 600—50-ton Drop End Gondolas and 100—70-ton Covered Hoppers. The railroad specified wrought iron pipe for the AB Brake piping on all these cars. The installation on one of the Covered Hoppers, built by Greenville Steel Car Company, is shown above. The pipe is Byers Wrought Iron.

With half a million or more AB brake installations in prospect in the near future, the savings possibilities of Byers Wrought Iron Brake Pipe, both in installation and in service, take on added importance and significance. Byers Wrought Iron Brake Pipe has shown its ability to stand the severe short-radius bends necessary during installation. The absence of "spring-back" simplifies fitting, and leaves the assembly free of harmful stresses. Finally, the hickory-like structure of wrought iron protects it against the premature fatigue failure that vibration and shock cause in ordinary vulnerable materials.

The desirable properties of Byers Wrought Iron come direct from the unique character of the material. Tiny fibers of glass-like silicate slag, threaded through the body of high-purity iron, give a structure something like that of a stranded wire cable. When corrosion is present, the fibers serve as baffles, to halt and diffuse the attack, and so discourage pitting.

Our General Catalog will give you full dimensional information on Byers Wrought Iron pipe. May we send you a copy?

A. M. Byers Co., Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, Seattle, San Francisco.

BYERS

GENUINE WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE ALLOY STEELS · OPEN HEARTH ALLOY STEELS
CARBON STEEL TUBULAR PRODUCTS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

Inspection Center for CHILLED CAR WHEELS

CHICAGO is the central point of coast-to-coast activities carried on by the Manufacturers of Chilled Car Wheels. There you'll find the Association's own well-staffed and fully-equipped test laboratories . . . its files of wheel data . . . the key supervisory personnel of its Inspection Department and its Metallurgical and Engineering force.

AMCCW's Chicago headquarters acts as a clearing house. From it are unified the inspection and testing techniques of all association Resident Inspectors, each permanently located in a member company's plant. From Chicago to the industry go the findings of committees on Recommended Operating Practices . . . on Wheel Design . . . on Specifications.

Hand in hand with the operating information supplied each member from AMCCW in Chicago is the exercise of firm control by the Association. High standards of manufacture are the prerequisites of continuing membership.

AMCCW

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

230 PARK AVENUE, NEW YORK 17, N. Y. • 445 NORTH SACRAMENTO BOULEVARD, CHICAGO 12, ILL.

Organized to achieve: Uniform specifications — Uniform inspection — Uniform product

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 121, No. 14.

They've got stamina plus

To meet the demands of today's motive power, firebox plates have to be really good. Bethlehem metallurgists have given Bethloc Firebox Plates the qualities needed for this strenuous service. They have stamina plus. They give long, satisfactory service, regardless of how severe the fatigue stresses caused by vibration and fluctuating temperatures.

Made to exacting standards from a special grade of low-carbon steel, Bethloc plates are but slightly affected by aging, and easily meet railroad standard requirements for strength, elongation and elasticity. They are being used in heavy-duty locomotives on more than forty American railroads.

Bethloc Firebox Plates are only one grade of Bethlehem's complete line of steel plates. Bethlehem makes a grade of steel plates for every railroad need, including plates for passenger cars, freight cars, tenders, water tanks, bridges, and other uses. Put your plate requirements up to Bethlehem.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

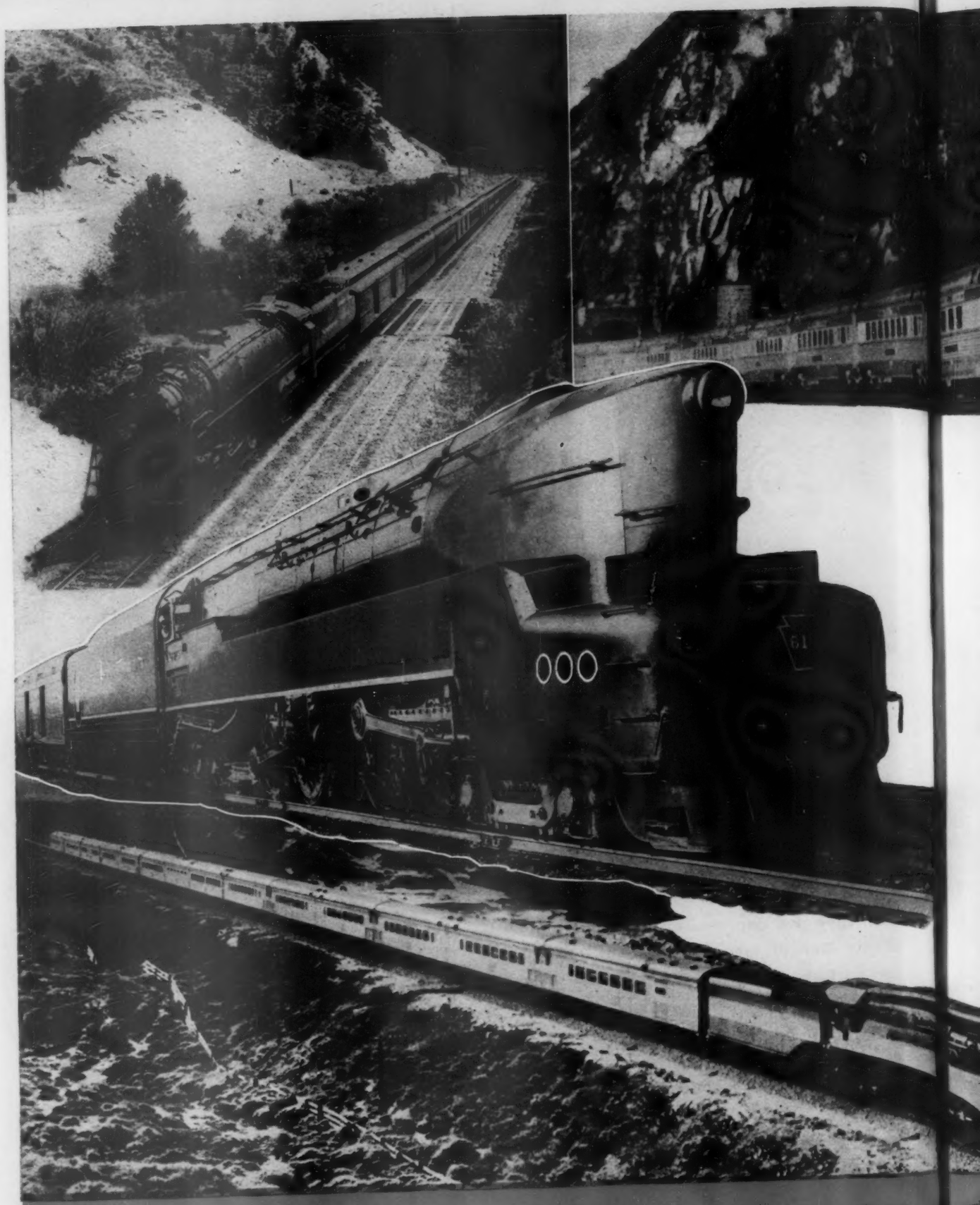
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation

A Bethlehem Plate for Every Railroad Need

In addition to Bethloc Firebox Plates Bethlehem also makes steel plates for tenders, water tanks, passenger cars, freight cars, bridges, and other railroad needs.

Bethloc BETHLEHEM STEEL

FIREBOX PLATES


FLANNERY BOLT

LOCOMOTIVES COMPLETELY
EQUIPPED WITH

HOLLOW FLEXIBLE STAYBOLTS

HAVE MADE OVER

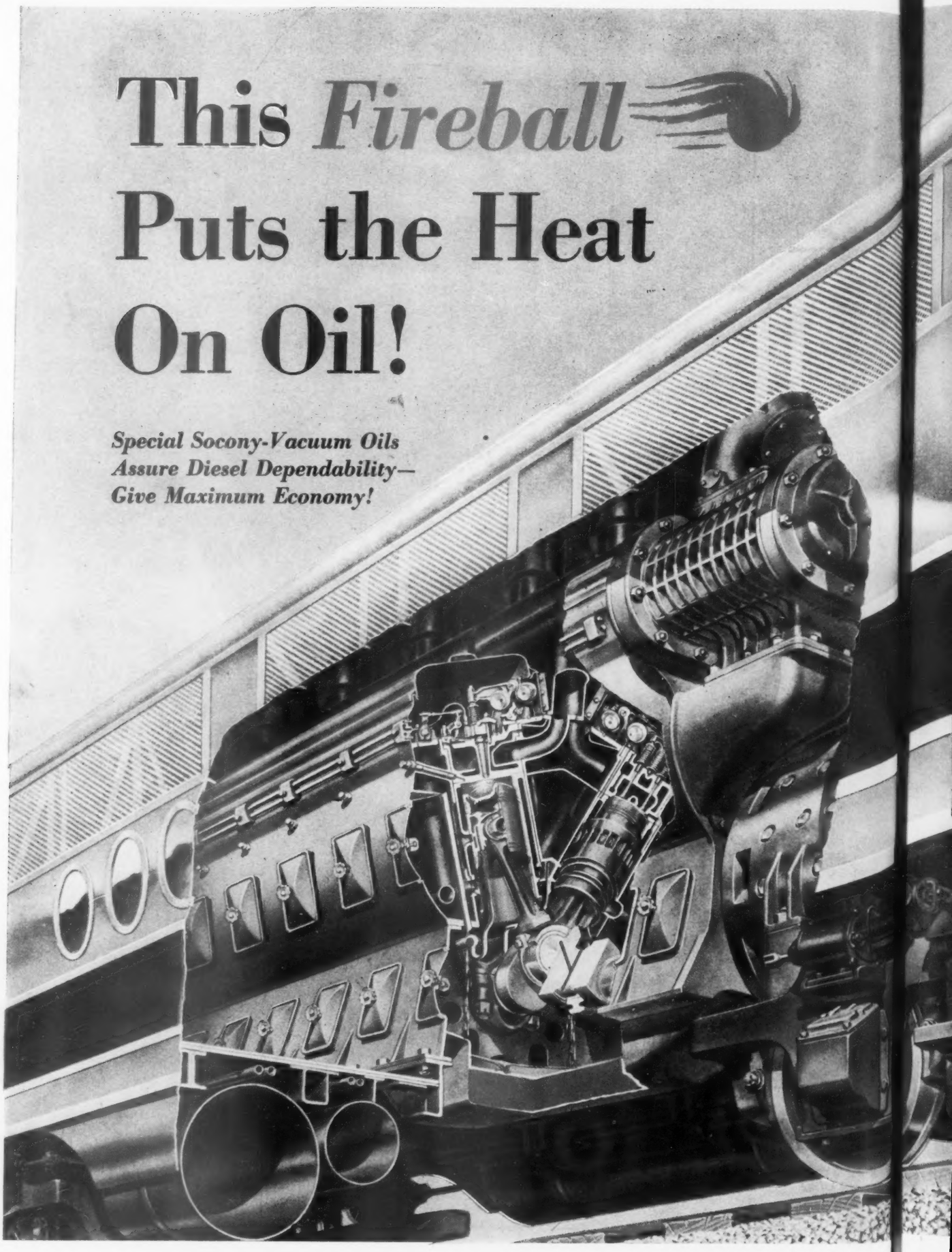
400,000 Miles

WITHOUT REPAIRS TO THE
FIREBOX

T COMPANY BRIDGEVILLE PENNSYLVANIA

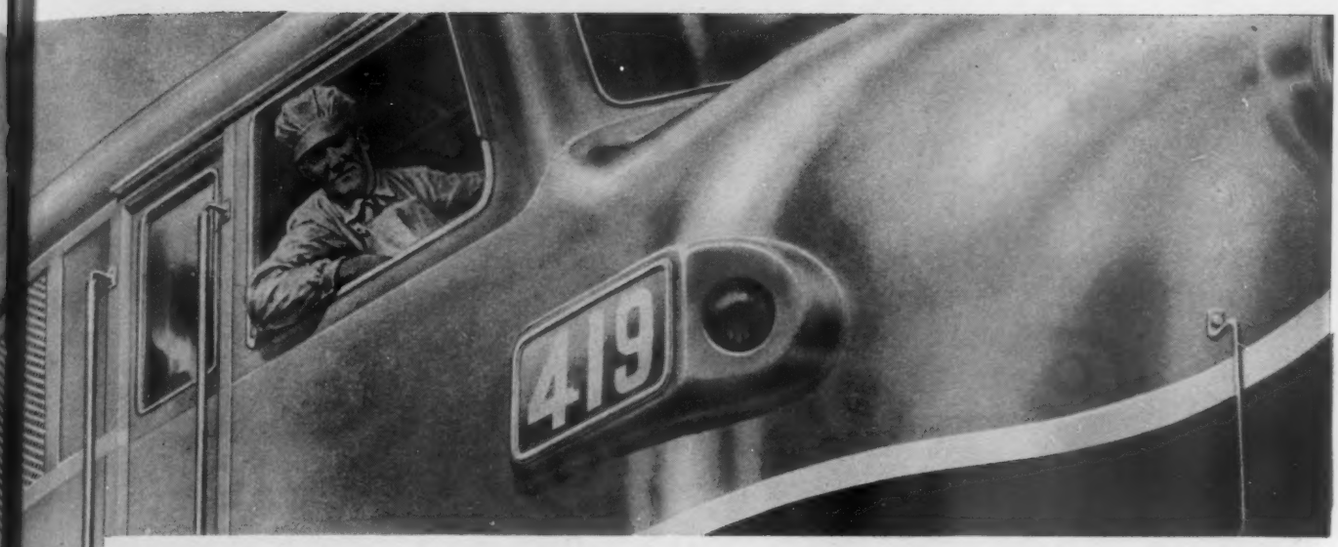
This *Fireball* Puts the Heat On Oil!

Special Socony-Vacuum Oils Assure Diesel Dependability— Give Maximum Economy!



October

RAILWAY AGE



Pulling heavy loads at high speeds, this modern Diesel-electric locomotive challenges lubricating oil to a continuous battle against high temperatures and pressures.

Every time those cylinders fire, the combustion heat shoots past the melting point of platinum. Extremely high pressures hammer down on the piston heads, and push out against the cylinder walls.

The oil selected to resist oxidation in the ring zone heat, and to maintain piston seals under terrific pressures, must possess both great chemical stability and exceptionally strong lubricating properties.

Socony-Vacuum has developed special Diesel oils to set the highest performance standards in this and every other type of Diesel service. Their superior stability reduces ring-sticking, valve-clogging hard carbon deposits to a minimum, while their strong films minimize metal-to-metal contact and protect against wear.

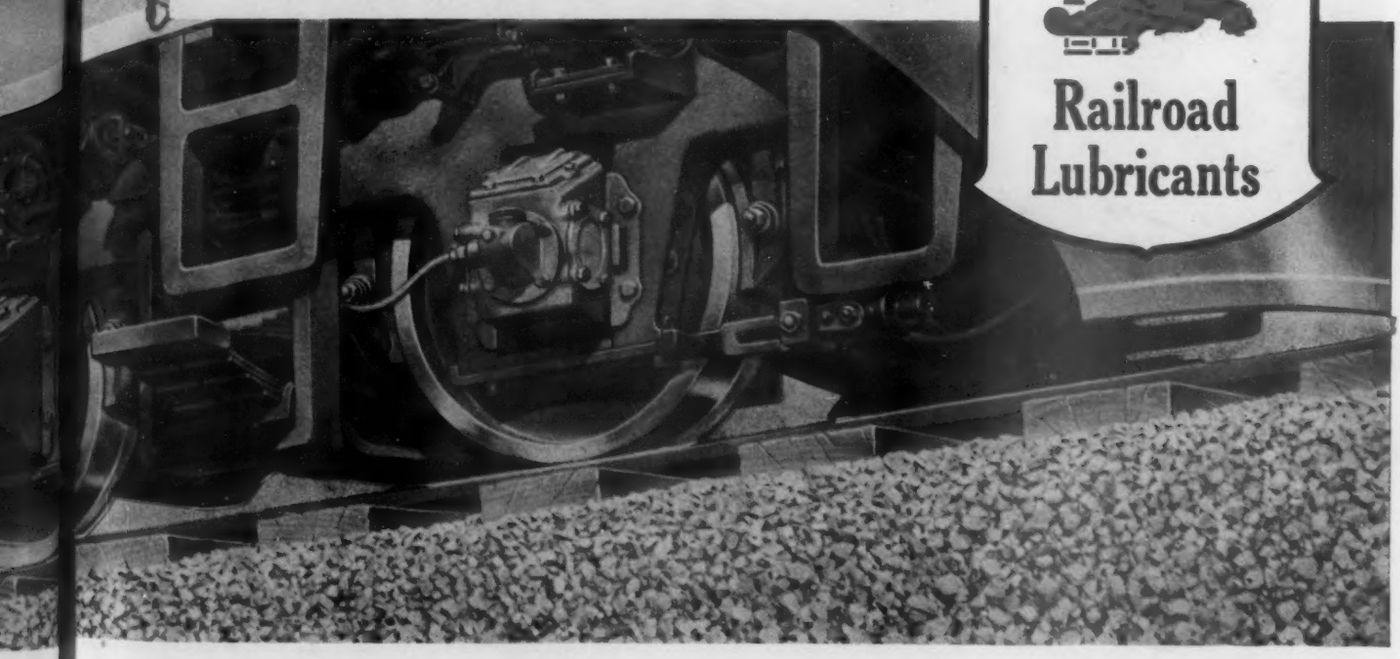
The outstanding performance of these exceptional lubricants is another example of Socony-Vacuum's ability to provide correct lubrication for all railroad equipment. No matter how tough or specialized the problem may be, your Socony-Vacuum Representative can give you expert advice and assistance.

Socony-Vacuum Oil Company, Inc.

and Affiliates: Magnolia Petroleum Co., General Petroleum Corp.

GARGOYLE

Railroad Lubricants

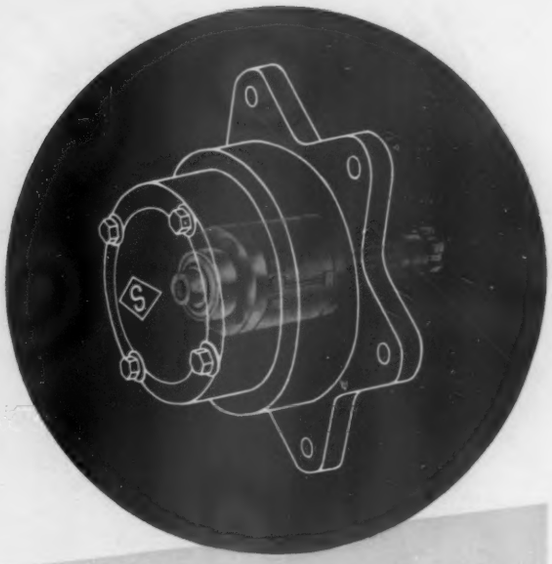


SPEEDY PATROL

• **One button tests the controller on each truck**

4711

prevent slid flat wheels . . . with the AMERICAN BRAKE SHOE CONTROLLER



CONSTANT CONTROL

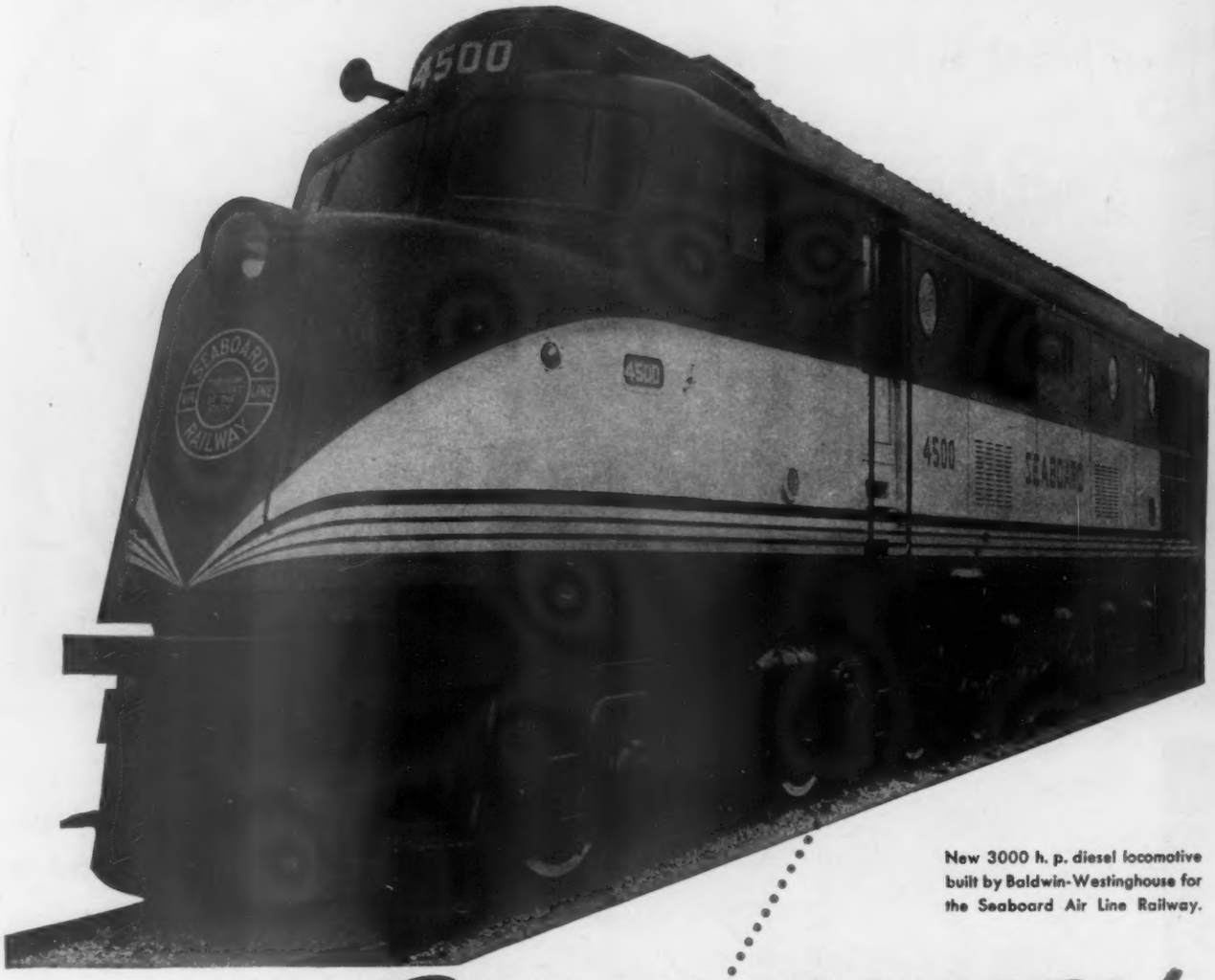
Like alert policemen in today's quick-starting, fast patrol cars, the American Brake Shoe Controller is always prepared to sweep instantly into action. It is a constant protection against slid flat car wheels. Being completely *electrical,* it operates immediately. It gives railroad men the important operating benefits of car availability at all times.

The American Brake Shoe Controller is a positive-acting device . . . accurate and unfailing . . . simple and rugged. It detects wheel slippage at the first sign, corrects that situation almost instantaneously, and then restores full brake at the moment when slippage has been eliminated. The American Brake Shoe Company, 230 Park Avenue, New York 17, N.Y.

AMERICAN Brake Shoe COMPANY

BRAKE SHOE AND CASTINGS DIVISION

WORLD'S LARGEST DIESEL-



New 3000 h. p. diesel locomotive built by Baldwin-Westinghouse for the Seaboard Air Line Railway.

PHILCO-EQUIPPED!

For dependable all-weather starting a Philco railroad diesel battery provides many outstanding advantages, such as heavy positive plates with extra power and snap, and low-resistance copper core terminals. In this demanding service Philco delivers the power that's needed—*instantly!* To get the extra margin of built-in ruggedness and efficiency specify Philco, the diesel battery with the all-weather "kick". Write for specification data . . . PHILCO CORPORATION, Storage Battery Division, Trenton 7, New Jersey.

PHILCO

FOR FIFTY YEARS A LEADER IN
INDUSTRIAL STORAGE BATTERY DEVELOPMENT

One of six Diesel locomotives of the same design now in through passenger service on the Baltimore & Ohio, No. 56 powers the Capitol Limited between Washington and Chicago. This 3600 h.p. giant, placed in operation eight years ago, has earned an enviable reputation by maintaining low-cost, dependable service despite its sustained, heavy-duty war-time operation.

Vanadium Steels

The 2-million-mile-and-still-going-strong service record of this B. & O. Diesel locomotive is typical of the repeated use of Vanadium steels, by locomotive and car builders, to secure the extra margins of strength, wear resistance and heat resistance so important for the most efficient operation.

On the B. & O. No. 56, for example, driving motor pinions and gears are of Chromium-Vanadium steel (SAE 6145) to obtain high strength-to-weight ratios combined with maximum wear resistance. Chromium-Vanadium steel (SAE 6150) is used for exhaust valve springs and many other parts which must resist high temperatures. And many cast parts utilize the uniform high strength and toughness of Manganese-Vanadium steels.

Our extensive knowledge of Vanadium steels and their applications is available through an experienced metallurgical and engineering staff. We will gladly assist you in selecting the right alloy steel to meet your particular needs.

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CHEMICALS and METALS

VANADIUM CORPORATION OF AMERICA

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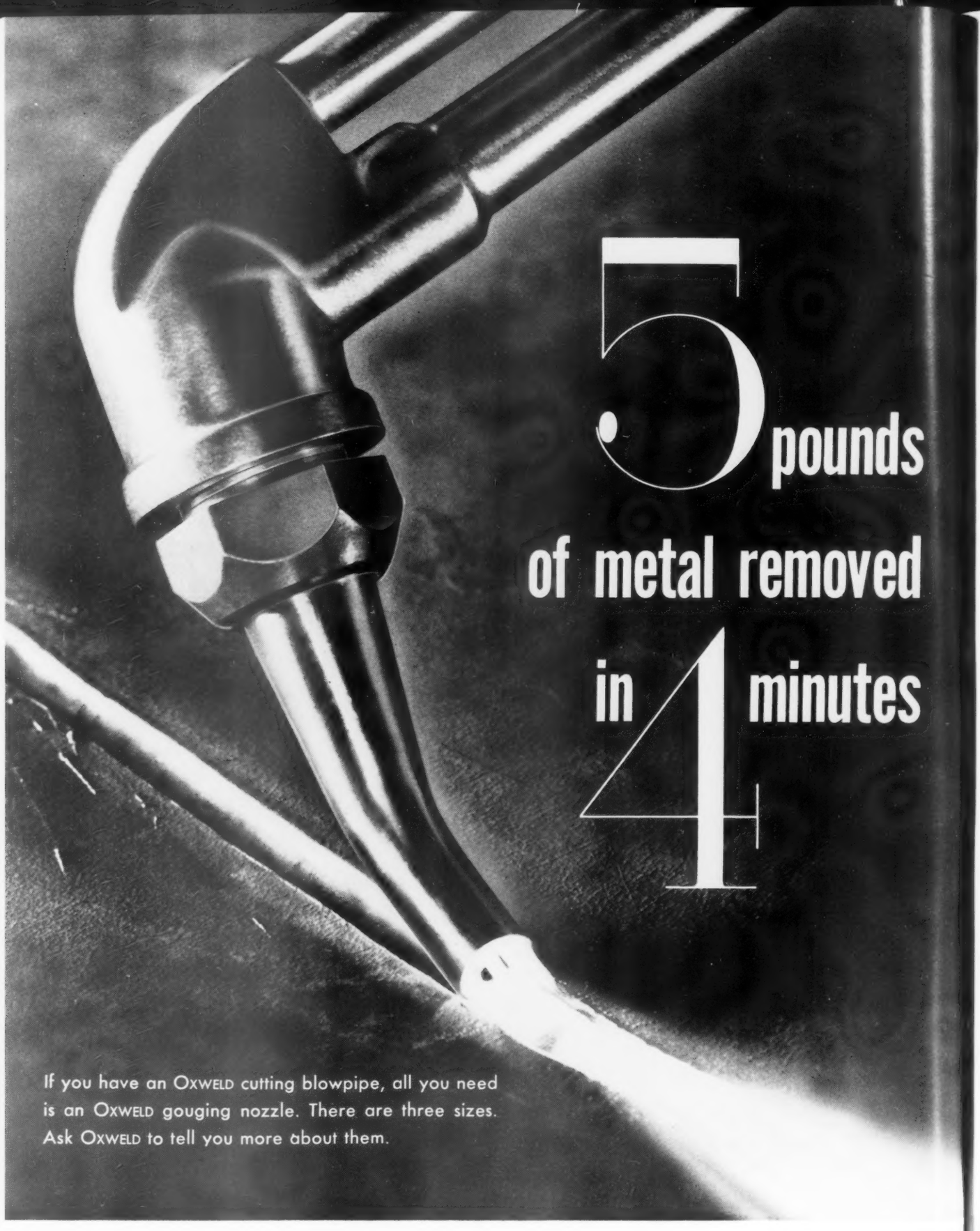
5 pounds
of metal removed
in 4 minutes
If you have an OXWELD cutting blowpipe, all you need
is an OXWELD gouging nozzle. There are three sizes.
Ask OXWELD to tell you more about them.

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Canadian Railro
SINCE 1912—

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These are the advantages of Flame-Gouging

1 **A faster way to groove weld joints to receive backing-up welds . . . 36 to 48 in. per min. (gouging time).**

Plate is prepared for welding at the rate of 16 in. per min. (hourly average).

2 **It is a quick and easy way to remove temporary or defective welds.**

The operator is removing studs that were used to clamp a testing head to a pipe section.

3 **Parts shaped by flame-gouging frequently require no machining before use.**

Welds on hopper car are gouged out at a speed of 20 in. per min. to permit removal of side stakes.

4 **It is a fast way to open up cracks in castings for welded repair or to modify forgings and castings.**

This 18-½ ft. crack in a casting was gouged out to sound metal in only 4-¾ hours.

5 **It is one of the quickest, most economical ways to prepare plate edges for welding.**

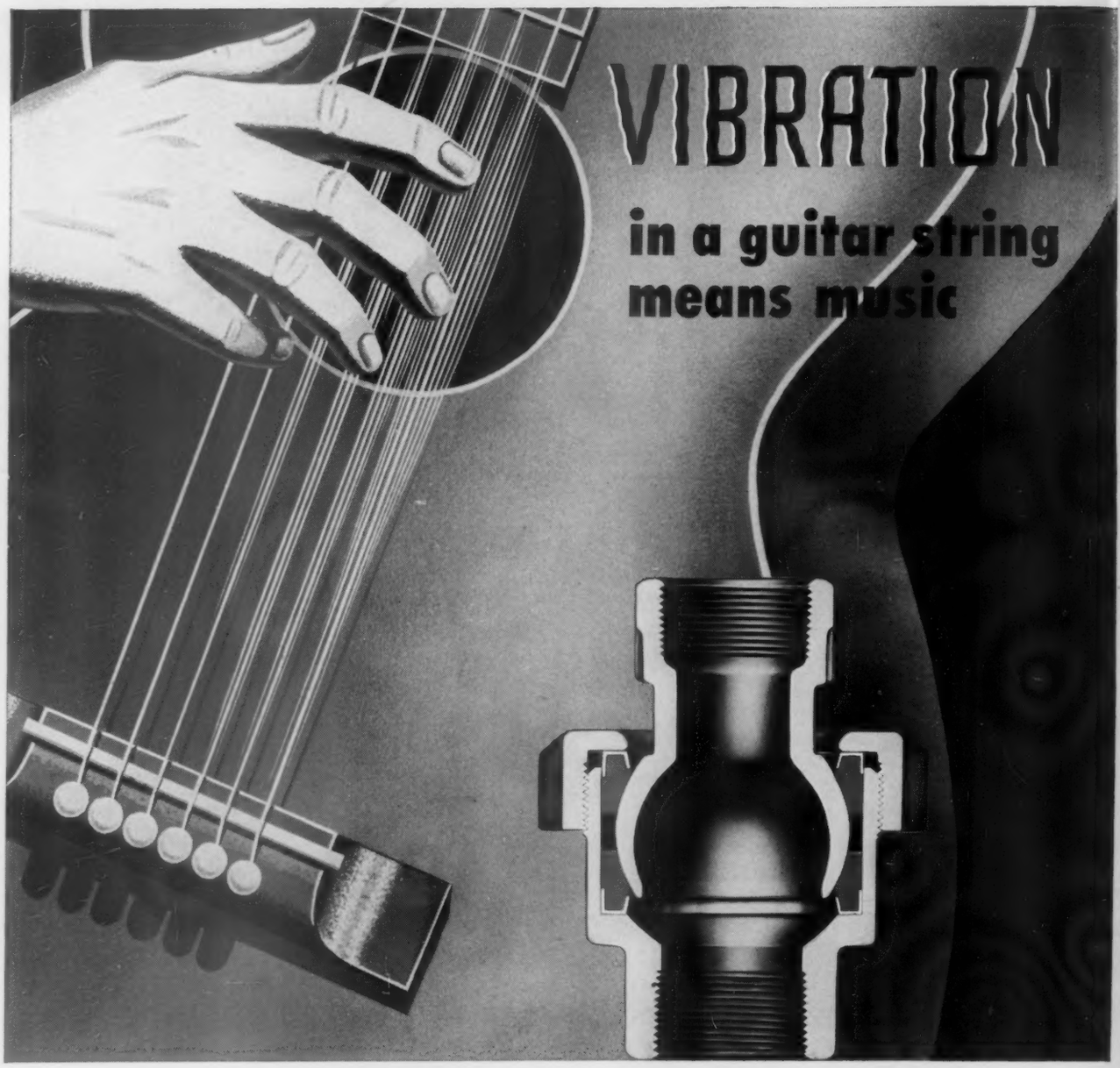
Two plate edges that have been tacked together are U-grooved simultaneously.

The word "Oxweld" is a trade-m

THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building Chicago and New York
In Canada:
Canadian Railroad Service Company, Limited, Toronto

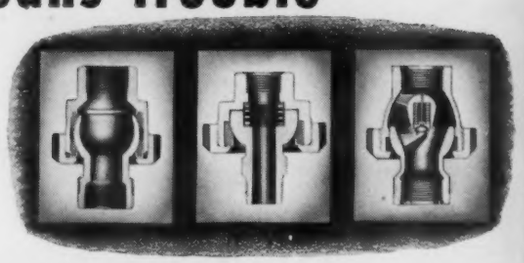
OXWELD RAILROAD SERVICE

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS



Vibration in a fluid line means trouble

Few things can wreck a fluid line system more quickly than constant vibration and shock. Flexibility to withstand these destructive forces is provided by Barco Joints. Simple in design, they compensate for expansion and contraction, absorb the effects of impacts and vibration. In over 30 years of service, Barco Flexible Joints have been adapted for use in every field of industry and transportation. For Technical Engineering Information, write to Barco Manufacturing Co., Not Inc., 1800 Winnemac Avenue, Chicago 40, Illinois.

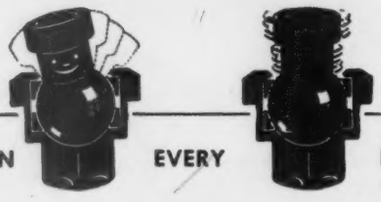


BARCO

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

FLEXIBLE JOINTS

Not just a swivel joint . . . but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.



In Canada: The Holden Co., Ltd., Montreal, Canada.

"MOVE IN EVERY DIRECTION"

TION
string
ble
TS
Not just a swivel joint ... but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.
DIRECTION"
RAILWAY AGE

10 to 1 it's **PANTASOTE**

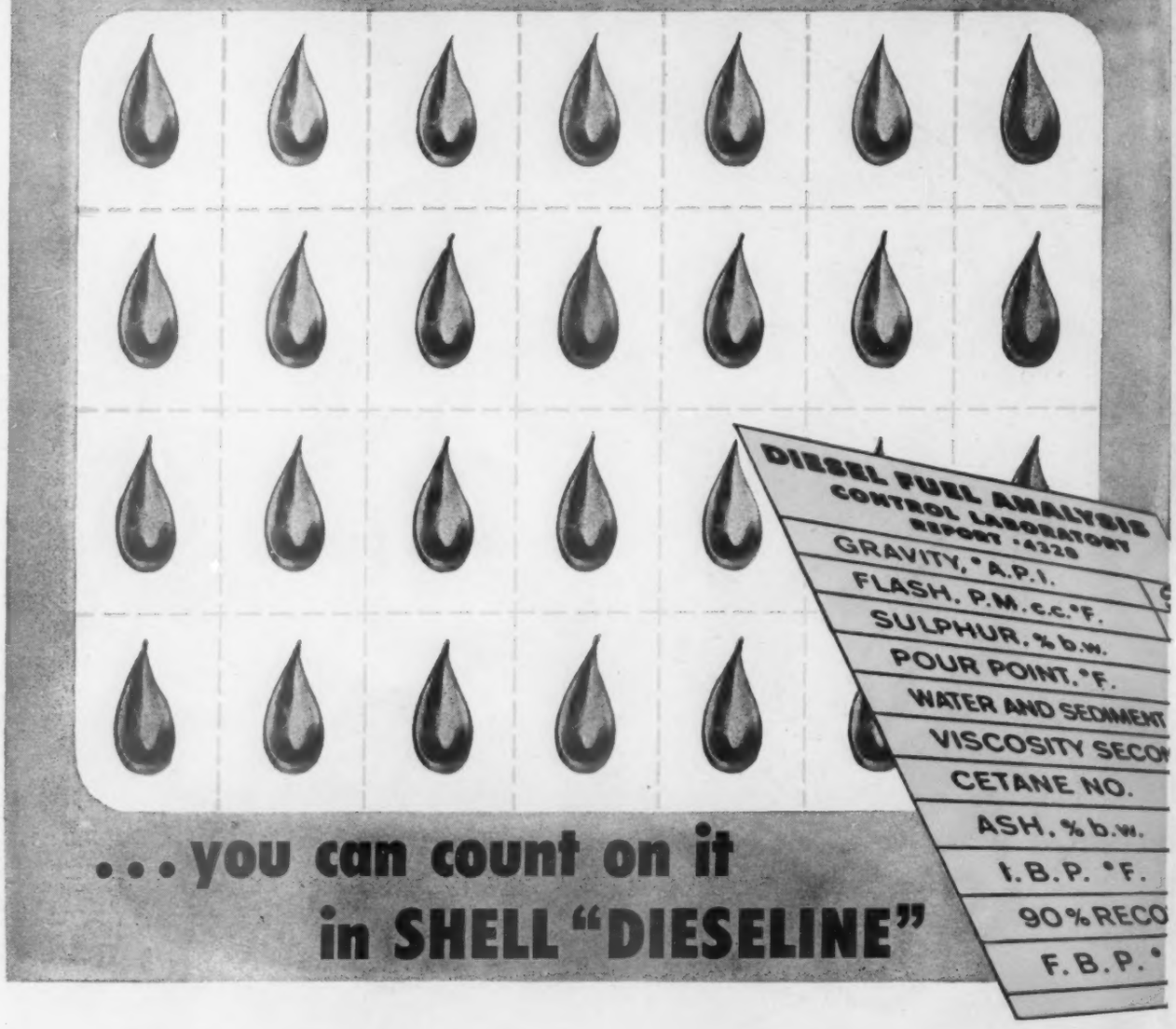
Now . . . pantasote plastic upholstery. You like its durability. Riders like its comfort

On sleeping car, parlor car, dining car or coach, when a curtain is pulled up or down—10 to 1 it's PANTASOTE!

. . . and you're the reason why! Because for over fifty years, railroad men have specified PANTASOTE Car Curtains—curtains that have lasted twenty-five or even thirty years in actual every-day service. That's even more reason why, to-day, you want to continue to specify PANTASOTE! Three qualities: DeLuxe, Printed, and Double-Face—all excellent!

THE PANTASOTE CORP. OF NEW JERSEY
444 Madison Avenue, New York 22, New York

UNIFORMITY...a most important quality



...you can count on it in SHELL "DIESELINE"

YOU CAN ANALYZE shipments of Shell "DIESELINE" for uniformity—it's there! It is the month-after-month, year-after-year kind of uniformity that so many Diesel engine operators claim is the best single reason they know for specifying Shell "DIESELINE" for any medium- or high-speed engine.

It's this same demand for uniformity that causes Diesel manufacturers to be particular about the fuel they use in engine testing—and why so many prominent makers have standardized on Shell "DIESELINE"—not just for the past year or two, but for ten, and, in the case of one of the leading engine-makers, for *twelve consecutive years!*

Why not try this modern quality fuel in your engines for a month or two? Keep records and compare with the results you've been getting. Very likely you will be surprised at the top-notch, *consistent* performance you get from Shell "DIESELINE."

For more information about Shell "DIESELINE" and other Shell Fuel Oils, write to Shell Oil Company, Incorporated, 50 W. 50th St., New York 20, N. Y.; or 100 Bush St., San Francisco 6, Cal.

SHELL

SHELL DIESEL FUELS

Cost Cutters

IN THREE DIFFERENT WAYS!

Ride-Control Trucks cut operating costs in *many* ways. Their soft, long-travel springs under constant friction control mean a *smoother* ride for lading . . . less *roadbed* maintenance . . . *longer life* for rolling stock.

So, whether you judge freight car performance on the basis of overall ton-mile expense, or by lading damage totals—*or by both*—you'll find Ride-Control Trucks an excellent investment in transportation economy . . . and excellent for *every* service.

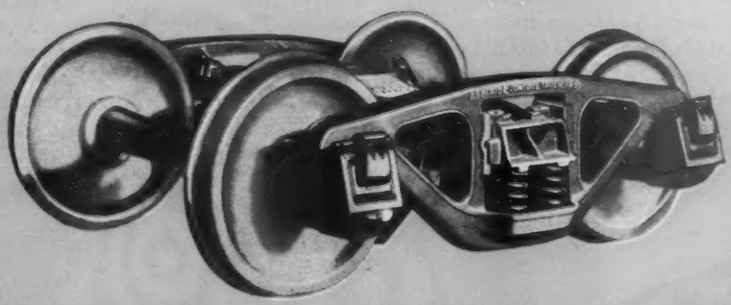
Ride-Control Trucks are the modern trucks for all loads, *all speeds* . . . all needs, from hopper cars to box-express. They cushion bolster motion—up, down, across-track—yet weight and price are in the range of conventional designs.

For the softer, smoother easy ride that helps turn revenue into *profits*, specify A.S.F. Ride-Control Trucks. Already more than 37,000 car sets are in service or on order for 57 railroads and private car owners.

A·S·F *Ride-Control* TRUCK

NO SPRING PLATES • NO SPRING PLANKS

LONG SPRING TRAVEL • CONSTANT FRICTION CONTROL



AMERICAN STEEL FOUNDRIES

MINT-MARK OF ⬡ FINE CAST STEEL

UNBEATABLE

FOR LONG-LIVED ECONOMICAL

INSUTAPE

Pioneered by Union Asbestos and constantly developed to match the progress of railroad rolling stock and motive power, this highly efficient, long-lived insulation continues to set the pace! Operating tests under still air conditions prove that Insutape eliminates 64 per cent of bare pipe heat loss—under actual operating wind velocity conditions, savings are even greater!

EXPERIENCED UNARCO SERVICE

Union Asbestos sales engineers have long experience in cooperating with the railroads—making sure that steam pipe insulation affords mile-after-mile of fuel-saving efficient service. They range the Roads, assist in applications, educate workmen, inspect rolling stock—suggest methods whereby additional protection for pipes and greater economy to the railroads may be had.

UNION ASBESTOS
MEANS PROGRESS IN INSULATION
AND RUBBER CO.

332 S. MICHIGAN AVENUE
NEW YORK

COMBINATION

INSULATION EFFICIENCY

EXPERT APPLICATION

Railroad men know that Insutape and Wovenstone can be applied in a jiffy, that it always remains snug and firm against the pipe—will not shake down . . . and Insutape and Wovenstone can be removed for pipe inspection and reapplied with no loss of the original efficiency.

WOVENSTONE

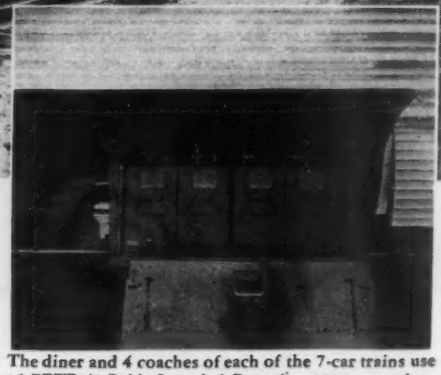
Wovenstone has proved its efficiency in 12 years of "active service." Many railroads can point with pride to rolling stock that is equipped with its original Wovenstone—rolling stock placed in service over 12 years ago. That's why railroad men say Wovenstone is a Proven Insulation!

UNION ASBESTOS
MEANS PROGRESS IN INSULATION
AND RUBBER CO.

CHICAGO 4, ILLINOIS

SAN FRANCISCO

PERE MARQUETTE'S STREAMLINERS USE EXIDE-IRONCLADS



The diner and 4 coaches of each of the 7-car trains use 16 EPTB-41 Exide-Ironclad Batteries, 1000 amp. hrs. capacity. The EMC Diesel locomotives are equipped with 32 cells MVAH-25 plate Exide-Ironclad Batteries.

Pere Marquette's new luxury day trains, first complete Post-War trains in the country, are a noteworthy achievement in modern design, construction, equipment, comfort. The batteries . . . throughout the train . . . are trustworthy Exides.

Exide-Ironclad Batteries crank the powerful, high-speed Diesel engines. Exides furnish power for air-conditioning, car lighting, radio, public address equipment, and other storage battery tasks. And along the roadway covered by this wonder train, many of the signal circuits that guide it safely on its way are Exide powered.

Since 1891, Exide has been serving America's railroads, assuring safe, dependable and economical storage battery service . . . with long-life and ease of maintenance.

Exide
IRONCLAD BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • *Exide Batteries of Canada, Limited, Toronto*

KEEP ROLLING STOCK ROLLING
...AT LOWER COST!

Get rolling stock back in service faster—at a saving. Yale Material Handling Machinery will help you do it. Take this Crane Truck as an example. It lifts and transports thousands of pounds "on the double". Quick to slew and boom, and easy to inch massive parts in place, the Yale Crane Truck cuts hours off complicated stripping and rebuilding jobs. Such speed and efficiency in handling materials reduces costs, gets equipment back on the rails in record time.

But the highly mobile Crane Truck is only part of the Yale line. There are hand lift and electric trucks for handling skids and skid bins—and others for lifting, moving and storing pallet loads. There are scales and hand chain and electric hoists for every need. In fact, Yale offers you a wide range of modern material handling machinery, all designed to speed work, save effort, and cut costs. Ask for complete details. Write or phone the nearest representative, or get in touch with us direct. The Yale & Towne Manufacturing Company, 4530 Tacony Street, Philadelphia 24, Pa.

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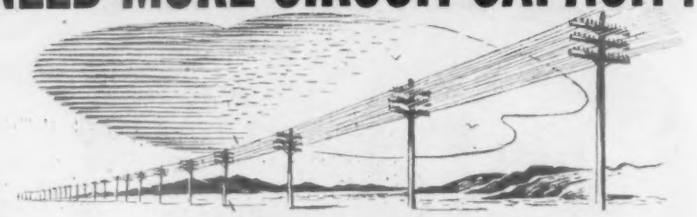
CUTS PRODUCTION COSTS . . . SAVES TIME . . . SAVES EFFORT . . . PROMOTES SAFETY

KRON INDUSTRIAL SCALES • HOISTS—HAND AND ELECTRIC • TRUCKS—HAND LIFT AND ELECTRIC

NEED MORE CIRCUIT CAPACITY?



You Can Get from
1 to 18 EXTRA CHANNELS
ON EXISTING TELEPHONE LINES
...with Federal Carrier Systems

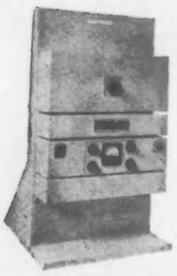
Federal's complete line of Carrier Telephone Systems offers you 5 ways to increase circuit capacity, without the expense and delay of new line construction.

Each type of carrier has been engineered for a particular type of service—but all are of Federal quality in every detail. That means FTR *features:* Hermetically-sealed units, compact construction, flexibility of operation, ease of installation, and above all—service-proved dependability, backed by Federal's 37 years of experience in designing and manufacturing superior telephone and electronic equipment.

AVAILABLE NOW!

Federal's expanded manufacturing facilities have boosted production so that prompt shipments can be made. For complete information, write to Dept. H547.

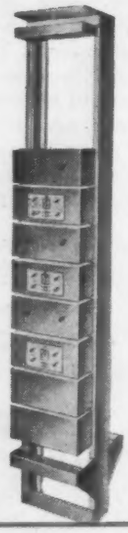
SEE FEDERAL'S EXHIBIT of this equipment at The Association of American Railroads Convention, Hotel Statler, Detroit, on November 19, 20 and 21.



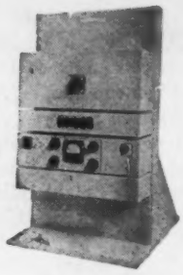
FTR 9-A-1
Single-Channel Carrier
Gives one additional speech channel over existing open-wire lines. Normal range—up to 300 miles without repeaters.

FTR 9-B-1
Three-Channel Carrier
Gives three additional speech channels over existing open-wire lines. Normal range — up to 200 miles without repeaters.

FTR 9-C-1
Speech-Plus-Duplex Telegraph Carrier
Gives duplex teleprinter channel over telephone or radio circuit (two over carrier telephone channel) retaining speech facilities — up to 100 words per minute — distortion minimized by frequency modulation.



FTR 9-E-1
Multi-Channel Carrier
Provides from 1 to 18 voice-frequency telegraph channels — up to 100 words a minute — over telephone facilities.



FTR 9-F-1
Single-Channel Carrier
Second Story
Physically and operatively similar to 9-A-1 but operates at higher frequencies. Occupies spectrum above normal single channel systems. Normal range up to 200 miles without repeaters.

Federal Telephone and Radio Corporation

In Canada:—Federal Electric Manufacturing Company, Ltd., Montreal
Export Distributor—International Standard Electric Corporation, 67 Broad St., N. Y. C.

Newark 1, New Jersey

FOR EXISTING EQUIPMENT

The new Holland Style C-200 is a complete unit—a long travel, self-damping, suspension truck spring *for existing equipment.* It takes the place of all the conventional helical springs.

For an accelerated test, install these new "Double-Purpose" Springs under one of your Tenders in high-speed service. We'll furnish instruments to make recordings (in co-operation with your engineers) of riding qualities "Before and After".

New Holland *Ride-Ease* Volute Truck Spring STYLE C-200

50-Ton Group for Cars and Tenders

2¾" Travel

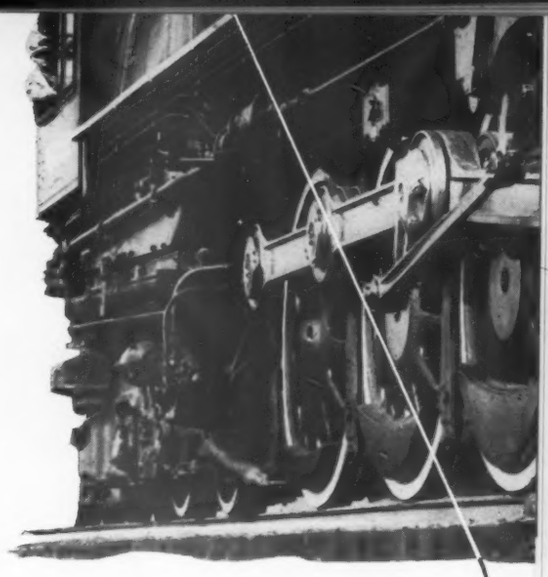
Twice as Soft as the A. A. R. 1915 Spring

HOLLAND COMPANY

332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

1897

Facts About Steam Locomotive Parts



Riveter

What happens here may make a huge difference in service and safety here!

Seventh Advertisement of an Important Series

THIS giant bull riveter working on an upended boiler of the Belpaire type in ALCO's Schenectady shops performs hydraulic riveting swiftly and economically. The "Bull's" pressure range of from 42 to 200 tons per square inch permits ALCO to manufacture the largest locomotive boilers now in railroad use, and insures correct capacity and pressure ratings in strict conformance with specifications. This giant riveter's stake measures 23 feet from floor to riveting die, has a tower clearance of 52 feet from die to limit switch, and is serviced by a 65-ton crane.

Manned by an ALCO specialist, it contributes effectively to the high economy of ALCO production, while firmly upholding the high standard of ALCO quality.

This is another example of why genuine ALCO replacement parts give you the greatest possible value per dollar in safety and service! American Locomotive Company, 30 Church Street, New York 8, N. Y.

American Locomotive

Alco

THE MARK OF MODERN ENGINEERING

30 YEARS PLUS...

and still in service!

THIS J-M ASBESTOS SHINGLE ROOF

BACK IN THE YEAR 1914, this attractive roof of Johns-Manville Asbestos Shingles was applied on the Troy, Alabama, station of the Atlantic Coast Line Railroad.

Today, after more than 30 years' exposure, its lines are as true, its protection against sun, wind and rain as complete as the day it was put on!

You won't have to look far to find other "old timers" with similar records among the many roofs of J-M Asbestos Shingles in railroad service. For these sturdy shingles are built to last. Fireproof as well as rotproof, not one has ever burned or worn out. Maintenance in most cases has been next to nothing!

Find out just how little it will cost you to give the buildings along your right-of-way this same enduring, low-cost protection. For complete information, write Johns-Manville at New York, Chicago, Cleveland, St. Louis or San Francisco.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville

88 YEARS OF SERVICE TO TRANSPORTATION

Plan Now—for Tomorrow

To Assure Highest Availability, Lowest Maintenance Costs

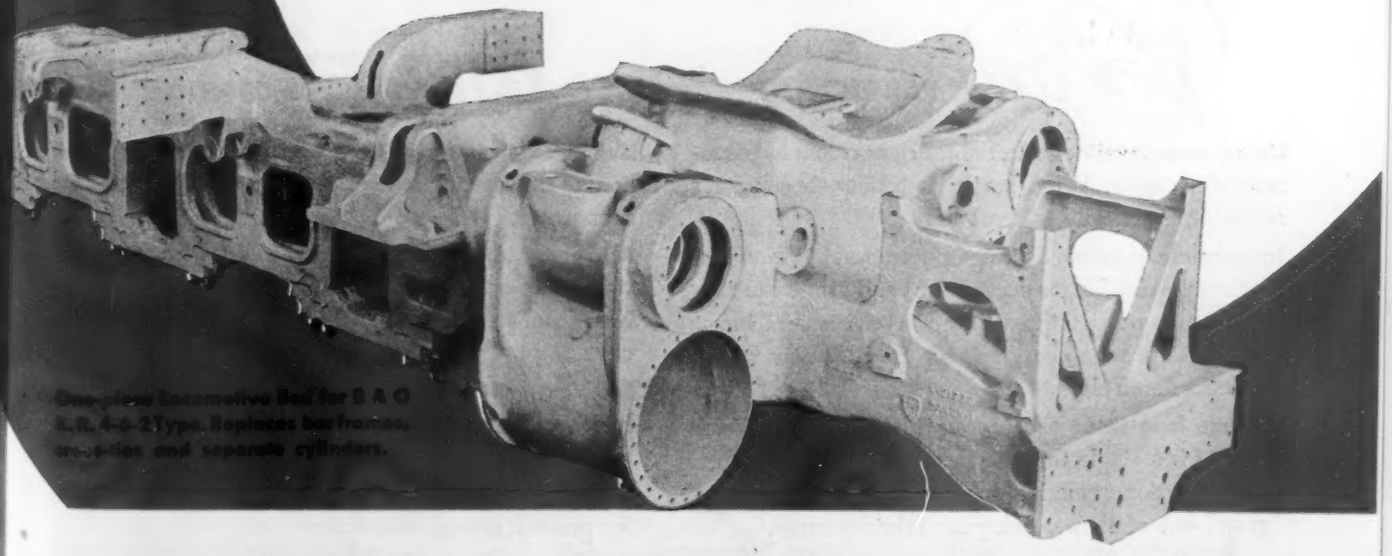
Modernize Your Locomotives with

COMMONWEALTH Locomotive Beds

NOW is the time to plan on improving existing steam locomotives to be sure of maximum economy and highest efficiency, with a minimum of subsequent maintenance expense.

COMMONWEALTH LOCOMOTIVE BEDS have a long, proven reputation of achieving these results. The advantages of a one-piece cast steel unit over built-up bar frame construction with separate cylinders are many: maximum strength—the elimination of many assembled parts, including hundreds of machined, fitted bolts—greatly simplified construction that reduces maintenance work.

On their record of performance, *Commonwealth Locomotive Beds*, have stood the test of time—*keeping locomotives in active service longer*, under today's requirements of higher speeds and longer runs.



One-piece Locomotive Bed for B & O L.H. 4-6-2 Type. Replaces bar frames, cross-ties and separate cylinders.

GENERAL STEEL CASTINGS

EDDYSTONE, PA. GRANITE CITY, ILL.

30 YEARS PLUS...

and still in service!

THIS J-M ASBESTOS SHINGLE ROOF

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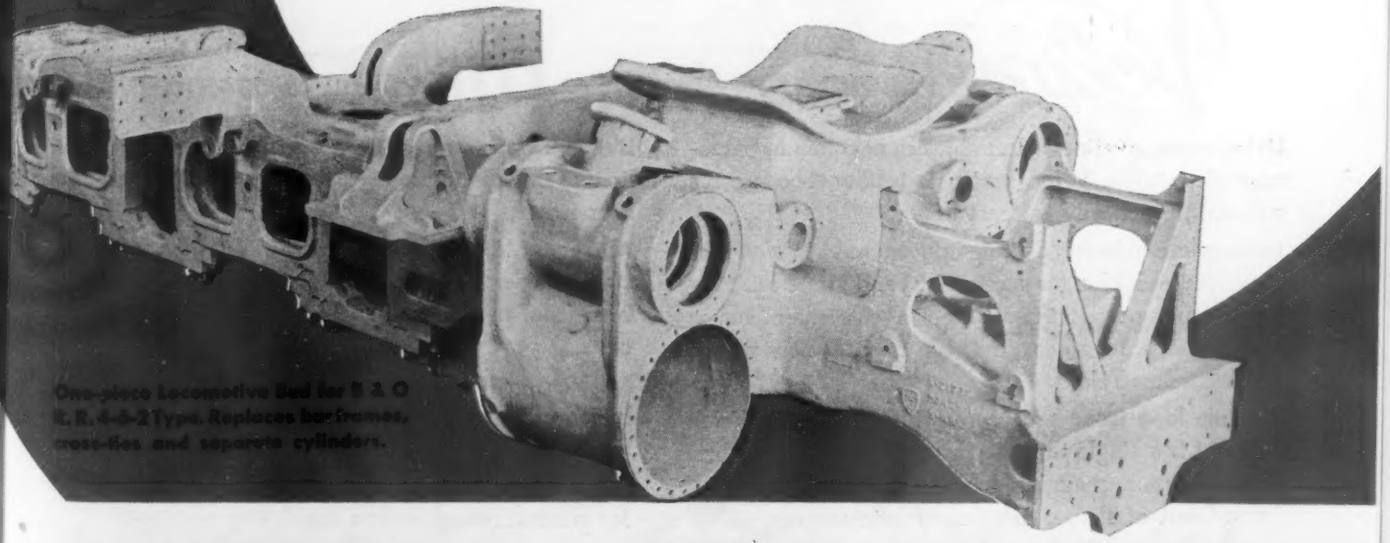

One-piece Locomotive Bed for B & O R. R. 4-6-2 Type. Replaces bar frames, cross-ties and separate cylinders.

GENERAL STEEL CASTINGS

EDDYSTONE, PA. GRANITE CITY, ILL.

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Firestone

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Living-room loveliness. In light, bright colors in "decorator's" patterns, *Velon* keeps its beauty, because it's soilproof, practically wearproof.

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Living-room comfort. *Foamex* floats passengers on millions of tiny air-and-latex cells that give gentle, cradling support.

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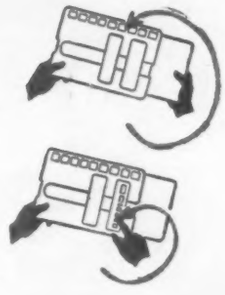

9162-A1-7B

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Please send me a new Reynolds Aluminum Alloy Selector.
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Please send me a Reynolds Metals Weight Calculator, for which I enclose 50 cents. ( )

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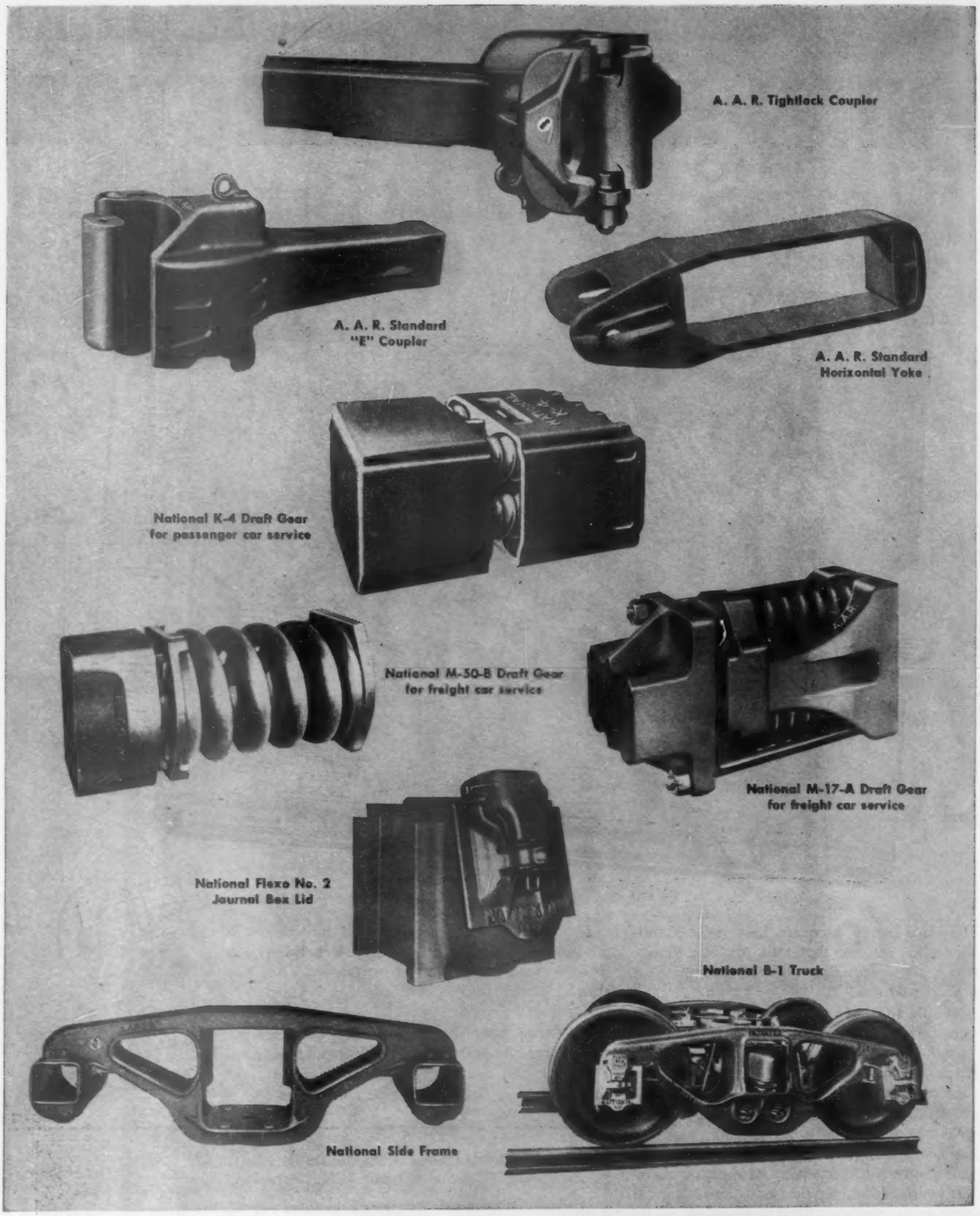
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National Flexo No. 2 Journal Box Lid
National B-1 Truck
National Side Frame

Est. 1868

NATIONAL

SALES OFFICES: **Cleveland, Chicago, New York, Philadelphia, Richmond, San Francisco, St. Louis**

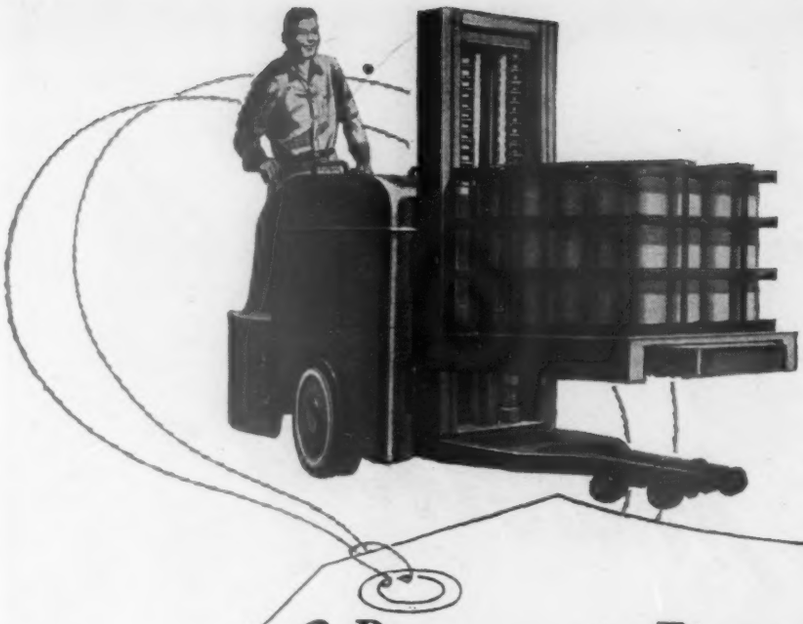
• Back in the "horse-and-buggy days", National pioneered in new designs, new materials, new processes. As traffic moved from roads to rails, National led in advanced engineering to make possible higher speeds, greater smoothness and safety.

Today, as passengers and freight ride faster and safer than ever before, National continues to contribute progressive thinking and planning for still greater improvement.

For economy and durability—with safety, smoothness and high speed—you can always depend on National products.

MALLEABLE AND STEEL CASTINGS CO.
Cleveland, Ohio

WORKS: Cleveland, Chicago, Indianapolis, Melrose Park, Illinois, Sharon, Pennsylvania



3 Reasons why Electric Industrial Trucks are Worth More!

Behind every order placed for electric industrial trucks, you'll find the same dominant need—the ever increasing urgency to keep materials moving *on schedule, with safety* and *at rock bottom cost per ton handled.*

In more than 300 industrial and distributive fields, electric industrial trucks show greatest ability to meet this need day after day, year after year, because of three salient features of their performance:

✓ *Unsurpassed dependability*, preventing costly "bottlenecks" in material flow where idling men or waiting machines waste money by the minute.

✓ *Inherent operating safety* for op[illegible] loads, equipment and surroundings—sa[illegible] ings that go straight to earnings.

✓ *Economy of battery drive* and of experience-tested construction, evidenced by the lowest overall operating cost of any type of industrial truck with any type of motive power.

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Can you afford *less?*

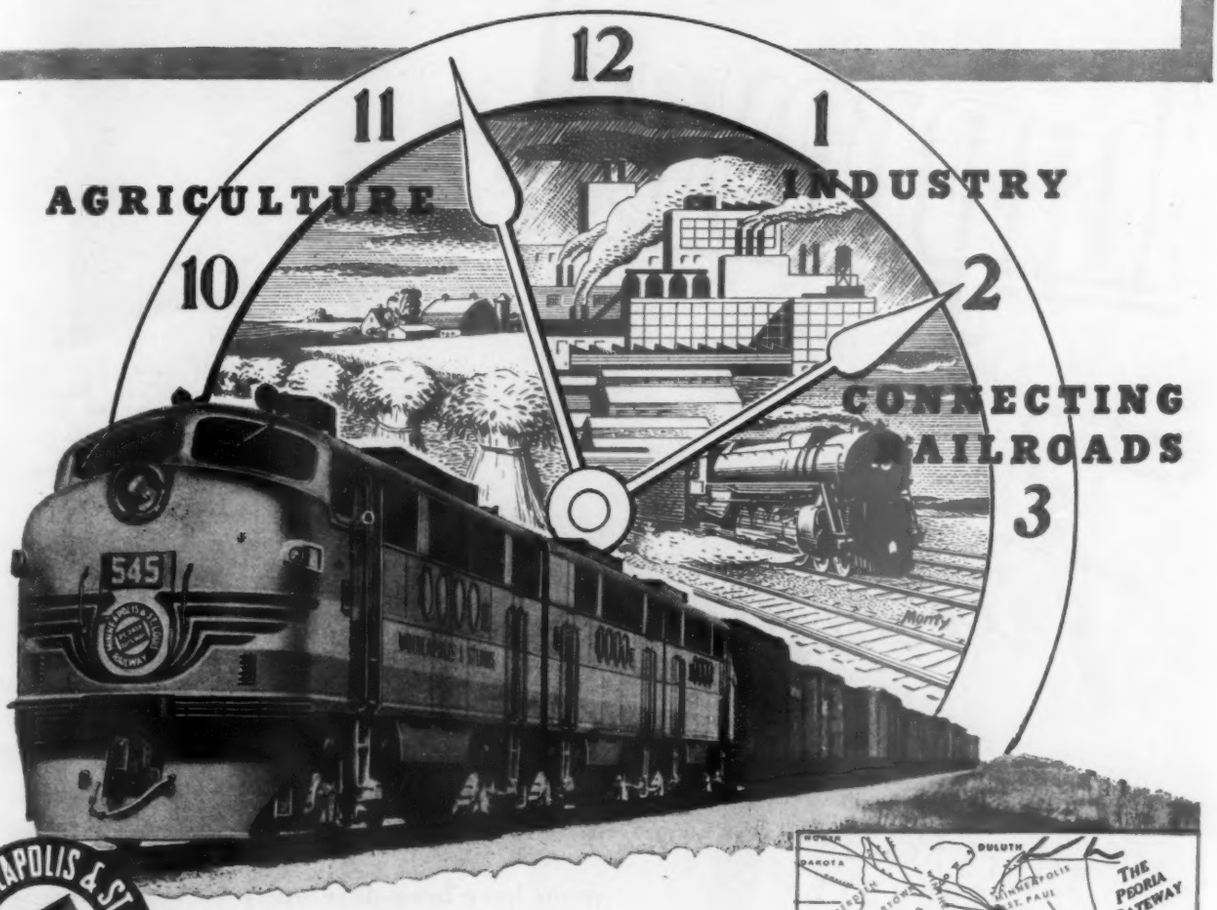
New ideas for immediate savings in this free MATERIAL-HANDLING HANDBOOK. It tells why over 90% of all electric trucks sold in the past 20 years are still in service.

THE ELECTRIC INDUSTRIAL TRUCK ASSOCIATION

208A South La Salle Street, Chicago 4, Illinois

The PEORIA GATEWAY

Saves precious hours for...



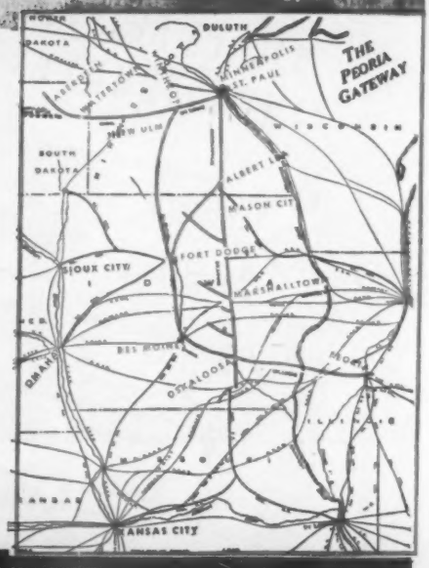
THE MINNEAPOLIS & ST. LOUIS RAILWAY CO. — THE PEORIA GATEWAY

Freight, shipped to and from points in Minnesota, South Dakota, Iowa and Illinois, moves Faster via

THE MINNEAPOLIS & ST. LOUIS RAILWAY
and its Peoria Gateway

The clock in the picture symbolizes Time saved by routing freight through this great Traffic Gateway to the East and South. The Map shows the strategic network of M. & St. L. lines, on which modern equipment, rolling over heavy-duty tracks, provides

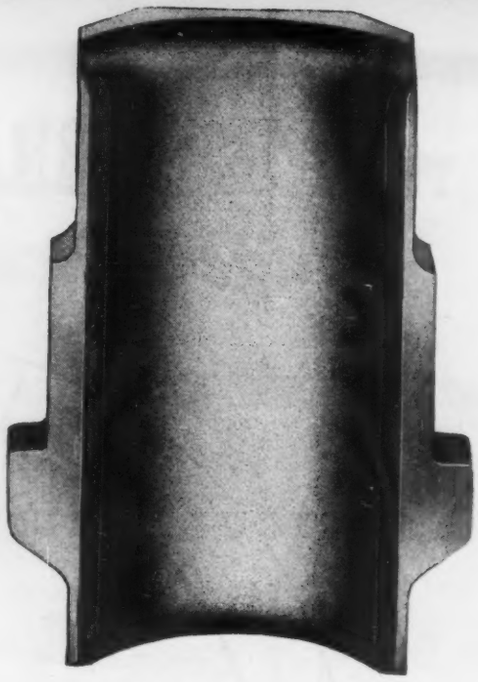
Fast Dependable Freight Service for the Midwest



The MINNEAPOLIS & ST. LOUIS *Railway*

GENERAL OFFICES: NORTHWESTERN BANK BUILDING • MINNEAPOLIS 2, MINNESOTA

Improved



Engine-Truck, Trailer, Tender and Passenger-Car Journal Bearings

Finer finish OF JOURNAL BEARINGS

MAGNUS BEARING IMPROVEMENTS

1. Improved Bearing Metal Composition
2. Improved Satin Finish Broaching
3. Improved Denser Lining Metal
4. **Improved Finer Finishing Equipment**
5. Automatic Heat Control for Metal Melting Kettles

● **New finishing methods and equipment have been developed which result in a finer, satin-smooth finish on Magnus Bearing Linings.**

SATCO Bearing Metal

MODERN HEAVY DUTY BEARINGS

MAGNUS METAL CORPORATION
CHICAGO NEW YORK

1775

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Yoloy is Easy to Weld

YOUNGSTOWN'S Yoloy is a high-tensile steel that can be welded as readily as most carbon steels of the same carbon and manganese content.

Yoloy is a high-tensile low alloy nickel copper steel deriving its greater physical properties from a balanced combination of chemical elements which reduce air hardening to a minimum.

This easy welding property of Yoloy has been demonstrated in hundreds of applications. Fabricators and welding engineers frequently praise the strong, safe, ductile, easy-to-make welds they obtain on Yoloy steel.

In addition to its ease of welding and greater strength, Yoloy is ductile, has more impact strength and has superior ability to resist corrosion and abrasion making it an ideal steel for that tough job where weight saving without loss of strength or service life is required.

Yoloy steel is available in the form of sheets, plates, strip, bars and tubular products. For further information just phone the Youngstown district sales office which serves you.

YOUNGSTOWN

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GENERAL OFFICES - YOUNGSTOWN 1, OHIO

Export Offices - 500 Fifth Avenue, New York City

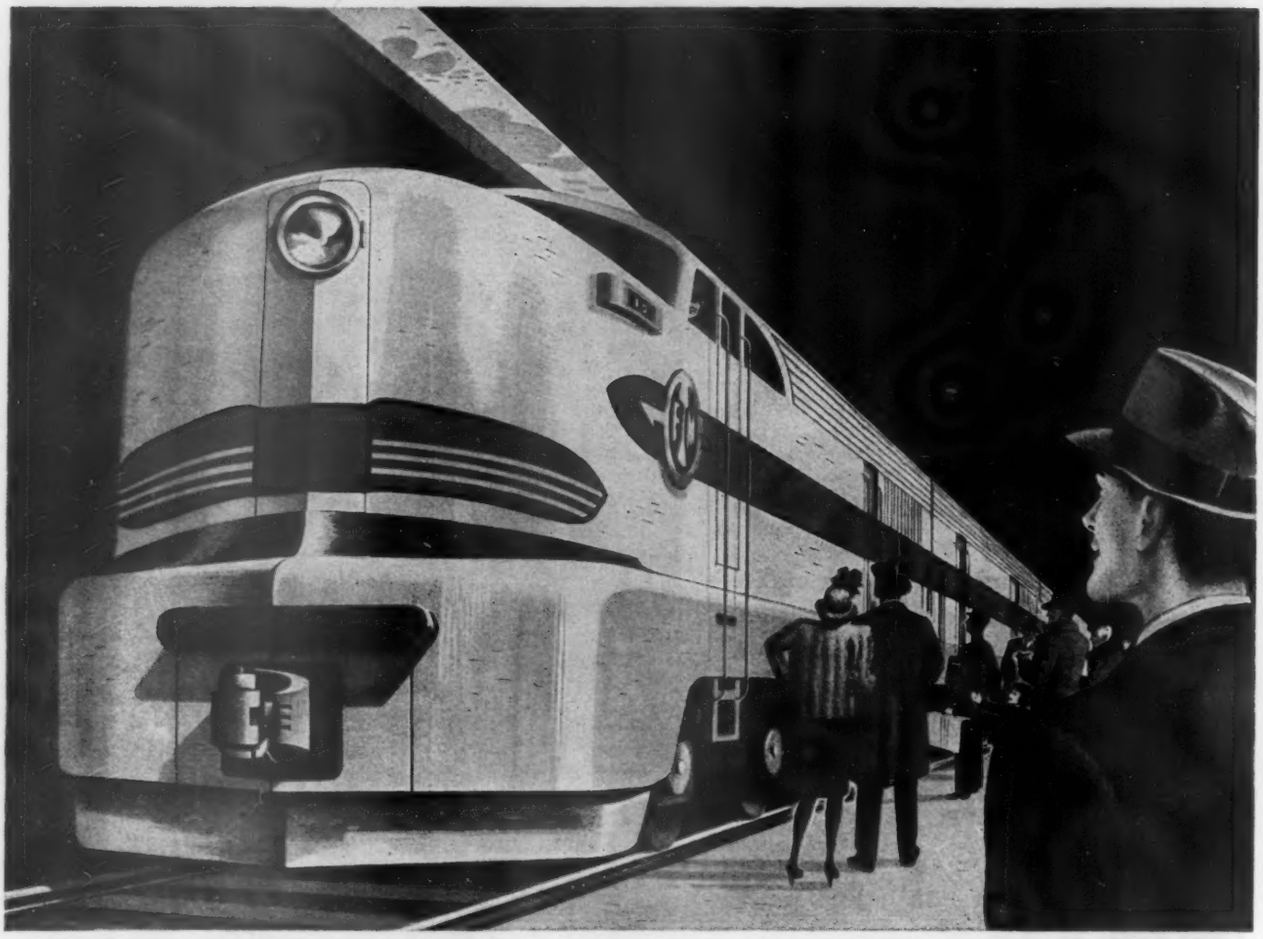
Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

QUALITY YOUNGSTOWN SERVICE

Sheets-Plates-Pipe and Tubular Products-Bars-Rods-Wire-Cold Drawn Carbon Steel Rounds-Tie Plates and Spikes-Conduit - Electrolytic Tin Plate - Coke Tin Plate.

FAIRBANKS-MORSE DIESEL LOCOMOTIVES



Revenue-Building Locomotives

Travelers and shippers alike favor railroads that offer the fast, punctual transportation for which diesel locomotives are noted.

But attracting business isn't the only way Fairbanks-Morse Diesel Locomotives help railroads pay dividends. These locomotives cut operating costs . . . because they are highly efficient . . . because Fairbanks-Morse Opposed-Piston Diesels are simple and easy to maintain and service . . . and because fewer diesels are required per locomotive. Each Fairbanks-Morse Diesel develops 2000 horsepower! Fairbanks, Morse & Co., Chicago 5.

Fairbanks-Morse

A name worth remembering

Diesel Locomotives . Diesel Engines
Scales . Motors . Pumps . Generators
Magnetos . Stokers . Railroad Motor
Cars and Standpipes . Farm Equipment

The stainless steel equipment in this modern dining car kitchen illustrates but one of many railroad applications for lustrous Republic ENDURO. Others include: structural members, sheathing, hardware, window frames, decorative trim, chairs, tables and lavatory equipment.

Enduro Pays in many ways

Lustrous, bright, sanitary appearance—plus factor of Republic ENDURO Stainless Steel—pays prompt dividends in improved employee relations.

ENDURO is clean—and remarkably easy to clean. It makes work easier. Employees take pride in keeping it spotless. They find new incentive in the bright, cheerful atmosphere created by gleaming ENDURO equipment. And its smooth, shiny surface never wears out because ENDURO is solid stainless steel all the way through.

There are many other reasons, too, why it will pay you to specify ENDURO Stainless Steel. See your equipment manufacturer or write directly to:

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

Republic
ENDURO STAINLESS STEEL
Reg. U. S. Pat. Off.

Other Republic Products include Carbon and Allo

Passengers ask the *darndest questions*

For example, the young lady just asked, "Why don't other trains stop nice and smooth like this one?" She probably wouldn't understand if the conductor explained about "HSC" brakes . . . but she'll remember and tell her friends about the smooth ride.

You can take a long step forward toward making your passengers enjoy their trips by equipping your trains with the "HSC" Electro-Pneumatic Brake. It is the most effective brake ever devised for controlling passenger trains. In addition to handling the primary task of train retardation it functions with amazing smoothness — the direct result of simultaneous application or release of braking forces on every car in the train. In doing that, slack action vanishes and passenger comfort is enhanced.

Today, railroad men, carefully weighing safety and passenger comfort, specify this Westinghouse group for their trains:

***"HSC" Electro-Pneumatic Brakes* . . . for braking flexibility to match modern train speeds, and unequalled smooth action**

***Speed Governor Control* . . . for regulating braking forces to wheel speeds**

***"AP" Decelostat* . . . for wheel slip detection to keep the wheels rolling.**

Westinghouse Air Brake Co.

WILMERDING, PA.

Railway Age

With which are incorporated the Railway Review, the Railway Gazette, and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 121 October 5, 1946 No. 14

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★

PRINTED IN U. S. A.

Formula for "ROCKET" PERFORMANCE . . .

As part of an extensive "Program of Planned Progress," the Rock Island installed "Union" Cab Signals on all locomotives operating over the 165 miles of double track between Blue Island, Illinois and Rock Island. As many as 100 trains, including 48 passengers, are operated between Blue Island and Joliet daily—50 between Joliet and Rock Island. Highlighting this fleet are 8 of the famous "Rockets" and the fast, streamlined Golden State Limited.

With the help of "Union" Cab Signals, the "Rockets" have established an enviable record of "on-time" performance, even though heavy fog is frequently encountered especially on about 75 miles of the line which parallels the Illinois River, and the schedules call for 90 m.p.h. sustained speeds—average speeds of over 60 m.p.h. with station stops.

The signal-that-rides-in-the-cab is continuously controlled to reflect track and traffic conditions ahead—conditions requiring reduction in speed or permitting an increase in speed are immediately signaled to the crew regardless of the train's position in a block. As a result, trains are operated at the maximum permissable speeds despite adverse weather. These signals insure maximum safety, greater economy, and higher efficiency in the operation of not only the Rock Island "Rockets" but of all trains in this territory.

Our representatives will gladly discuss how "Union" Cab Signals can serve your railroad to advantage. Write, or call, your nearest "Union" district office.

"UNION" CAB SIGNALS

UNION SWITCH & SIGNAL COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

ON THE SPOT: Less than a thousand employees of the Long Island are members of John L. Lewis' District 50. If they should strike, as they twice recently have been on the verge of doing, the railroad has plans to continue more or less normal operations. And the Long Island's operations, while important to many people who work in New York but live in the suburbs, could hardly be said to have any immediately serious relation to the general welfare of the nation. But it does not follow that the outcome of the current dispute between the Long Island and District 50 over wages and working rules is a minor issue of only local importance. As our leading editorial points out, *any* concession by the railroad, *any* recommendation by the "emergency board," whereby District 50 gains anything at all for its members that was not conceded the members of the so-called standard brotherhoods when the terms of last spring's wage adjustments (and rules change postponement) were worked out, immediately puts the brotherhoods on the spot. They either must gain at least the same concessions for the employees they represent, and promptly, or lose influence—and membership. It is not to be expected that they will elect the latter course.

●

POWDER KEG: Unless the "fact finders" Mr. Truman has appointed tell him that the Long Island's mine workers should get exactly the same terms as the brotherhoods won last spring—and no more—a sudden nationwide explosion of labor trouble on the railroads appears to be as inevitable as falling leaves in October. And this "emergency board" will be exhibiting an extraordinary lack of respect for precedent if it fails to recommend some sort of concessions to the demands of a union as powerful and astutely led as that of which District 50 is a part. It's a very dark cloud on the railroads' horizon, and the weather reports are ominous.

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B. & B. CONVENTION: A report of the first full-size post-war meeting of the Bridge and Building Association, recently held in Chicago concurrently with the convention of the Roadmasters, appears on page 561. Eight reports of technical committees and three addresses on matters of continuous professional concern to this group made up the program, apart from association business and joint sessions with the maintenance people to hear discussions of subjects of common interest.

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A GRAVE DECISION: If the Interstate Commerce Commission, in its way of performing the duty assigned to it under the national transportation policy, does not authorize increases in freight rates sufficiently large to afford the railroads a fair net income at a time when their business is better than average, what is it going to do about rates when traffic falls below that average? This is the question Carter Fort, summing up the railroads' case in the Ex Parte 162 proceedings, has in effect asked the commission to answer. In its decision—already tardy—in this case the commission will be determining the future course of government regulation of transportation. It must either apply the principles of the national transportation policy, namely, that sound economic conditions in transportation should be fostered and an adequate transportation system should be preserved, or it must risk the consequences of a departure from that policy. This issue's news pages report the final arguments of counsel appearing before the commission in this case.

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INVESTORS' SHARE: The suggestion is made in a feature article in this issue that one of the reasons the railroads' revenue needs have not had more favorable consideration in Congress, in wage negotiations, and in rate cases, is a lack of accurate information as to what part of railroad earnings goes to employees and what part goes to investors. An impression rather generally prevails that the holders of railroad securities get a much more liberal share of earnings than they do, in fact, receive, and one reason that erroneous impression prevails, this article goes on to say, is the "breakdown" made by the Interstate Commerce Commission's statisticians, in the commission's annual reports, showing what proportion of earnings they regard as consumed by wages and what they consider the investors' share. On the strength of these compilations the commission has been telling Congress in four reports out of eight that the investors' proportion has increased relative to the employees' share, when the facts, further analyzed, do not appear to support such conclusions.

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A DIFFERENT ANSWER: Among the practices of the commission's statisticians which would seem to have some bearing on the validity of their conclusions about the participation of the investor in the distribution of revenues, this article mentions such as these: The omission of $140 million in back pay, in 1944, from the portion "labor" is said to have received of the railroads' revenues in that year; failure to deduct expenses of non-railroad operations in calculating the investors' share; the assumption that investors receive interest accrued, when actually they receive only interest paid, a rather different and smaller amount; and failure to separate intercompany dividends and similar transactions from the payments actually made to investors. There are others of equal magnitude. Adjustments in the distribution of income data in the light of these challenged accounting methods result in an emphatically different conclusion as to what the investors' share is.

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BRIEFLY NOTED: The Burlington can't abandon an unprofitable line, the I. C. C. says, because highways in the vicinity aren't all they might be—and besides the road isn't bankrupt. . . . The government is out for reparations wherever it thinks war-time freight bills were too big. . . . The A. A. R. says the commission lacks authority to prescribe punitive per diem charges.

ELECTRICAL SECTIONS: An editorial this week reviews the background of the two Electrical Sections of the A. A. R., scheduled to hold conventions late this month, the first since 1941. In the years that these organizations and their predecessors have been fuctioning, either under speed restrictions or on clear track, there have been remarkable developments in the application of electrical apparatus and techniques on the railroads—fluorescent lighting, electric welding, air conditioning, train communication systems, Diesel-electric locomotives, for example—and the spectacular advances, theoretical and practical, in the whole wide field of electrical knowledge made during the war promise even greater activity in this branch of railroad technology. It appears that there will be plenty to talk about when these organizations get down to business in Chicago.

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CERTIFICATE 44 ENDS: Because, he says, the Department of Justice has expressed the view that rate conferences can function "effectively" without violating the anti-trust laws, Civilian Production Administrator Small has declined to extend the life of Certificate No. 44, the document first issued in March, 1943, to give carrier joint actions war-time immunity from the trust busters. Thus the open season is on again for the conspiracy catchers on the government payroll to take pot shots at the railroads whenever the spirit moves them.

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COAL TURBINE PROGRESS: The directors of the research activities of Bituminous Coal Research looking to the development of a practicable coal-burning gas-turbine locomotive recently reported in Chicago on the progress that has been made in the development of the fuel system of the new engine, including provisions for feeding and pulverizing the coal, ash removal, and the control of combustion under pressure. Their discussion of this timely subject appears as an illustrated article this week. One of the toughest problems the designers of this power plant have had to lick has been the removal of fly ash from the combustion products, and achievements in this direction are set forth in considerable detail, along with interesting comments on other ventures into new fields of technology and mechanical engineering.

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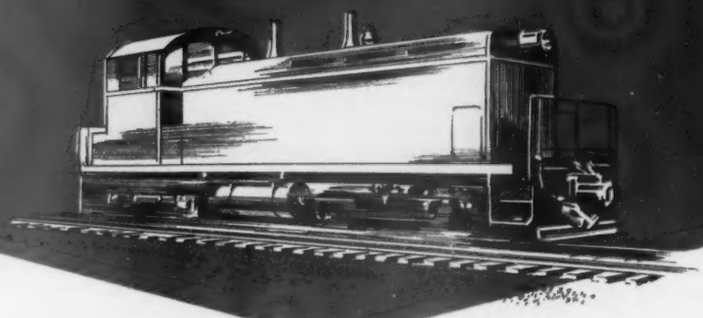
ENGINEERS' ABILITIES: An engineering officer of a railroad is more than a technician, he is also an administrator. It follows that his duties go beyond designing and planning innovations or figuring out opportunities to improve operating practices—he also must "sell" the results to the policy-making executives so that the potential benefits will be realized. An editorial in this issue develops this point, and suggests that failure to fight for the adoption of new methods or better devices is an indication either of a lack of appreciation of the full responsibilities of the engineering officer's job or of some of the abilities which a successful administrative officer must display.

1946 PARADE OF THE VETERANS



Veterans—and Gluttons for Work

The dependability story of General Motors Diesels in the passenger and freight field is well known — but don't overlook the remarkable records of General Motors Diesel switchers.

Here are 78 typical switchers by General Motors. During 10, 8, and 6 years respectively, these switchers have accumulated a total of 3,551,904 hours of work.

They are true veterans by the yardstick of work per month. Collectively they average 659 hours per month, and one group averages as high as 709 work hours per month. Average availability is close to 96.3%.

This suggests that in switchers too, long-time Diesel know-how and specialization at the factory pay off in switching yards.

CHICAGO, BURLINGTON & QUINCY

24-600 H.P. General Motors Diesel switchers, from time first locomotive was put into service, October 1936 through April 30, 1946, averaged 97.3% availability. Averaged —

653 hours per month

17-1000 H.P. General Motors Diesel switchers, from time first locomotive was put into service, April 1940, through April 30, 1946, averaged 97.5% availability. Averaged —

654 hours per month

BALTIMORE AND OHIO

16-600 H.P. General Motors Diesel switchers, since August and September 1940, and through April 30, 1946, averaged 95.9% availability. Averaged —

667 hours per month

8-1000 H.P. General Motors Diesel switchers, since October and November 1940, through April 30, 1946, averaged 93.4% availability. Averaged —

709 hours per month

ATLANTIC COAST LINE

6-1000 H.P. General Motors Diesel switchers, since first locomotive was put into service, January 1940, through June 30, 1946, averaged 94% availability. Averaged —

653 hours per month

CHICAGO AND EASTERN ILLINOIS

7-600 H.P. General Motors Diesel switchers, from time the first locomotive entered service January 1938, through June 1946, averaged 94.8% availability. Averaged —

626 hours per month

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS — LA GRANGE, ILL.

RAILWAY AGE

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Blundering into More Labor Trouble

The current effort of trainmen of the Long Island Rail Road—members of John Lewis' "catch-all" District 50 union—to secure for themselves a higher level of wages and more favorable working conditions than those accorded to trainmen on any other railroad in the United States, is not a dispute of merely local concern. If the case is bungled by the Presidential "emergency board" which is now considering it—and precedent, unhappily, offers little comfort to those who expect the contrary—then we are likely to have a sudden nationwide explosion of labor trouble which would make the other recent acute labor troubles seem by comparison as harmless as a meeting of a Ladies Aid Society.

Tremendous Potentialities

That this Long Island dispute is potential dynamite to the whole labor relations situation on the railroads is plain from even a cursory look at the circumstances. More than that, the demands of the employees in this case, if given general application, would make every railroad suburban passenger operation in the country so hopelessly bankrupt that such service might eventually have to be suspended, unless the taxpayers were willing to take it over and meet its deficits. Let's review briefly the evidence leading to these disheartening conclusions.

The railroad labor crisis last May was resolved, temporarily, when President Truman called on the Army to protect the operation of trains and denounced on the radio the leaders of the striking unions—A. F. Whitney of the Trainmen and Alvanley Johnston of the Locomotive Engineers—as a stubborn minority holding out against a settlement in which all the other railway union leaders had acquiesced. The President's intervention forced these two leaders to back down and accept the 18½-cents-per-hour increase, with a proviso that demands for changes in working rules be held in abeyance for a year—this being the basis upon which all the other "standard" labor organizations had voluntarily agreed.

The 1,000 employees of the Long Island who are members of District 50 of the United Mine Workers did not, however, accept this settlement. They just bided their time till the furore of the strike had subsided and, then, a few weeks ago, let it be known that they must have increases in pay and improved working conditions *at a far higher level, even, than that for which the Johnston and Whitney unions went on strike last May.*

This time, though, President Truman did *not* call upon the Army to help break the threatened strike as he did when it was two of the "standard" railway labor organizations which were recalcitrant. This time he did *not* go on the radio and denounce the hold-out union, and insist that it accept the settlement to which all other railroad employees in the country had acquiesced. Instead he appointed an "emergency board" to inquire into the merits of the demands of this U. M. W. railroad union—an ominous action, since it indicated that the President was willing to give this small body of trainmen organized by the U. M. W. a chance, at least, to raise their wages and working conditions above the level which, he had insisted, was the top for men doing exactly the same work but who are represented by the "standard" railway labor organizations. Mr. Truman, in other words, took sides in behalf of John L. Lewis and against the "standard" railway labor organizations.

It would be unjust to the "emergency board," now weighing the demands of the Long Island's trainmen, to assume in advance that it is actually going to award anything in the way of wage increases or changes in working conditions to these recalcitrant trainmen. It would be unrealistic, however, not to be apprehensive of such an outcome—in view of the fact that no "emergency board" has ever yet, so far, failed to concede to a union disputant at least a part of its demands. In this case, any concession whatever to the union will serve notice upon all railroad employees of the country that John Lewis' union enjoys Administration favor and can, as a consequence, achieve more for them in improved wages and working conditions than their "standard" organizations can.

Brotherhoods Can't Play Second Fiddle

These "standard" organizations are bound by their agreements not to raise the working rules issue again until the middle of next year—but, if the Long Island trainmen win any of the concessions they seek, the leaders of the "standard" organizations will be under the strongest kind of competitive pressure to insist that the railroads raise working conditions and wages everywhere to at least whatever standards are won by Long Island employees. The bitter irony of the railroads' situation is that they stand in peril of a

further effort to increase their labor costs, while the I. C. C. is still doddering along without authorizing rate relief from the higher labor costs forced upon the railroads last spring, at the insistence of the Administration.

There is no railroad "commuter" service offered anywhere which operates "in the black" under normal conditions—and the demands of the Long Island trainmen are aimed particularly at increasing the costs of operating this service which is already a philanthropy on the railroads' part, too costly for them to afford.

Suburban train service employees are now paid for 8 hours at the straight-time rate if 8 hours duty are kept within a "spread" of 10 hours. After the 10 hours' "spread" they are paid overtime besides their 8 hours even if their actual time on duty is less than 8 hours. A "commuter," let's suppose, resides in a town where suburban trains originate. He leaves his station on, say, a 7:30 a. m. train and gets back in the evening at 6:30 p. m.; and, in this "spread" of 11 hours, earns pay for 8 hours' work at his job in the city. The railroad crew which operates the train he rides on receives, under present rules, 8 hours' straight-time pay and one hour of overtime for duties which do not involve any more absence from home for them than for the "commuter" who is paid for only 8 hours—but this crew, under the Long Island demands, seeks pay for 8 hours straight-time and three hours of overtime for its service, even though it may be off-duty for four hours or more in the middle of the day.

If any such concessions as these are made to employees in a type of railroad service which is already hopelessly "in the red," it is quite plain that the railroads simply cannot continue to provide the service at rates which most passengers can afford to pay. If such concessions are made to employees of the Long Island who are members of the United Mine Workers, inter-union competition will force the "standard" labor organizations to make similar demands on all railroads providing suburban train service.

Unless the "emergency board" stands firm, therefore—insisting that railroad employees who have chosen John Lewis as their leader accept the same conditions in which the "standard" labor organizations have acquiesced, either voluntarily or under pressure from the Administration—then railroad labor trouble all over the country will almost certainly follow, with special difficuties in prospect for those communities which are dependent upon the railroads for local transportation of passengers.

Must Engineering Officers Be Statesmen Too?

Recently, two railway engineering officers stood looking at a new rail section—one recognized as having a better distribution of metal to increase its stiffness and overcome other disadvantages of earlier sections. Many thoughts besides the immediate design features before them were going through their minds—thoughts more fundamental. At length, one of them said: "Haven't we been chumps that we didn't insist upon more of this heavier and stiffer rail when we might have got it; and not only such rail, but adequate joint bars and other features of track design that we have known all along to be correct and badly needed?"

The other acquiesced and went on to say: "The fault with many of us chief engineers is not that we have not had courage in design and planning, but rather that we have too often lacked the courage to press aggressively for those things that we have known were right and in the interest of our properties." Both these officers had obviously repeatedly faced executives who had insisted so vigorously on retrenchment that it would have been heresy to have proposed increased expenditure, no matter how small, which could not be made to show an immediate return. They well knew that others in positions like theirs had been up against the same obstacle.

Both of them had had the experience of being cornered into admissions that existing designs "would get by"—when they knew very well that it was, nevertheless, an economic mistake to continue the old designs. They had courage of one kind, but not another, both of which are necessary to progress—that is, courage not only to design and plan, but also to demand and "sell" the adoption of their worthy innovations, with the wilfingness to be judged on the final results.

Maybe their criticism of themselves and their fellow engineering officers was too severe. Maybe it is the responsibility of engineers to design and plan, and to present the facts frankly and honestly, and no more. Maybe it is not the function of the engineer to demand and enforce correct decisions on his findings and recommendations. As technicians, probably their duties do go no further than the presentation of the facts—but as administrative officers their duties are not limited by such narrow professional concepts.

Not only courage, but some effort at adroitness in presenting and arguing a just cause, are needed in such a situation. One chief engineer said recently that he had never been able to get consideration from his management for rail heavier than 112 lb. for a certain main-line district, despite all of his arguments, including that of sizable economies in maintenance, until he suggested that with the heavier rail he would be willing to raise an existing 80 m. p. h. speed restriction to 90 m. p. h. That promise tipped the balance; he got the heavier rail.

If this officer is to be criticized, it is only because he had not thought of this argument before. A departmental administrative officer is not employed merely as a fact-finding technician, but to secure results in his department which are to the advantage—not just of his department—but of the enterprise as a whole. It is not an injustice or misfortune that departmental heads, if they are to get their projects approved, are forced to "sell" them in terms of satisfying the needs and desires of other departments of the business. Indeed, it is only by affording advantages elsewhere in the organization, especially that of increasing the long-run traffic and earnings of the company as a whole, that departmental objectives can be justified. An officer, whatever his technological accomplishments, cannot consider himself adequate to his job if he lacks the traits and skill required to get for his department the cooperation which it needs for its best performance in the interest of the company as a whole.

Coal and the Railroads

Two aspects of the subject of coal as railway fuel are presented in the address of R. L. Ireland, president of the Hanna Coal Company, and the paper by John I. Yellott and Charles F. Kottcamp, both presented before the recent annual meeting of the Railway Fuel and Traveling Engineers' Association and abstracted in the issues of September 28 and this week, respectively. The first deals with the direct mutual relations of the coal-mining industry and the railways, each as an important customer of the other; the second describes one of the most spectacular and well organized jobs of engineering development which has been undertaken in the railroad field. Together, they present a picture of the difficulties and the possibilities of improving the quality of coal performance as locomotive fuel.

The paper by Yellott and Kottcamp reviews the progress so far made by the Locomotive Development Committee of Bituminous Coal Research, Inc., in developing a coal-burning gas-turbine locomotive. This development program is an unusually clear example of the application of the engineering method to the solution of a problem which reaches beyond the beaten path of practical experience and engineering data. First is the analysis of the problem, breaking it into its component parts and separating the known from the unknown elements; then the separate solution of each unknown component, all ultimately to be brought together in the completed program. The rapidity with which the gas turbine itself has progressed as a prime mover is indicated by the fact that, while it was first widely considered in this country as a prime mover for locomotive use in L. P. Michael's report before the 1939 annual meeting of the Railway Fuel and Traveling Engineers' Association, it is now numbered among the known elements of the present problem and is not itself a subject of a research project. These projects deal almost exclusively with the problems of coal feeding, pulverization, combustion under pressure, and fly-ash removal; each of these phases is the subject of one or more research and development projects, all conducted quite separately from each other.

Progress has been steady and the probabilities are that by the end of 1947 or early in 1948 the coal-fired gas-turbine locomotive as a whole will have taken on tangible form.

While the relationship problems dealt with by Mr. Ireland in his address appear at first sight to be simple as compared with the complex technical problems involved in the coal-burning turbine locomotive project, one can look forward to as definite a rate of progress in changing the character of the relations between the two mutually interdependent industries with much less certainty. Indeed, the "fuddy-duddies" to whom Mr. Ireland refers in uncomplimentary terms are an exceedingly persistent crew.

The ultimate problem of the coal industry was stated by Mr. Ireland in the following terms: "Speaking for the coal industry, we ask you to forget the past. Please wake up! Please, by concerted action, use our coal more efficiently. We would much rather sell you half as much coal as we are now selling you at a good price than have to quit selling you at all." This is where a successful coal-burning gas-turbine locomotive will come in.

Scarcely a Thing Without a Wire on It

The meetings of the two A. A. R. Electrical Sections to be held at the Hotel Sherman, Chicago, October 22-25, mark a resumption of full-scale meetings with associated exhibits by the Railway Electric Supply Manufacturers Association. Seven years have elapsed since the R. E. S. M. A. held its last exhibit and it was five years ago, in 1941, that the Electrical Section of the Mechanical Division held its last meeting; that was a three-day session. The Electrical Section of the Engineering Division also held a three-day meeting in 1941. Since that time, the various technical committees of the Engineering Division have made reports, but their consideration has been limited to the Committee of Direction and no general meetings of the Section have been held.

What is now the Electrical Section of the Mechanical Division enjoyed a lusty youth, having been born as the Association of Car Lighting Engineers in November, 1908, the name being changed to Association of Railway Electrical Engineers in October, 1909. The first convention of the group under this name was a four-day affair held in Chicago, in October, 1910. Exhibits were shown by the members of the Railway Electric Manufacturers Association, with a total of 34 exhibitors. From that time forward, the A. R. E. E. continued to hold well-organized annual meetings until 1930, except for the two war years 1917-1918 and the year 1921.

The depression of the 'thirties and the second world war considerably curtailed association activities. There was a one-day meeting in 1932, two-day meetings in 1934 and 1935, a three-day meeting in 1936 and a two-day meeting in 1937, at which time the independent Association of Railway Electrical Engineers became the Electrical Section, Mechanical Division, A. A. R. Since that time there have been but three sessions; three days in 1939, one in 1940 and three in 1941.

The Railway Electric Supply Manufacturers Association carried on steadily with the A. R. E. E. meetings until and including 1930. In 1936, it again held an exhibit and in 1939 another. During the following six years, there were no R. E. S. M. A. exhibits, but this year it will resume its activities.

The history of the Electrical Section, Engineering Division, a somewhat smaller group, shows a less elaborate but more consistent schedule of proceedings. It is not affiliated with a supply group but has on several occasions held joint or consecutive meetings with the mechanical group. In 1929, the Electrical Section, Engineering Division, was organized in its present form, to take care of electrical subjects of interest to members of the American Railway Association, now the A. A. R. Before that time, beginning in 1906, electrical subjects (outside of communications

and signals) were handled by committees reporting to and working variously with the American Railway Engineering and Maintenance of Way Association and the Master Car Builders' Association. Between 1908 and 1929, electrical subjects within the A. R. A. were handled by the Committee on Electricity, this becoming the Electrical Section.

After its inception in 1929, the Electrical Section, Engineering Division, issued reports each year except for 1931 and 1935. Meetings were held as follows: 1930—two days; 1932 and 1934—1 day; 1936 and 1937—2 days; 1939 and 1940—1 day; 1941—3 days. In 1938 and 1943 reports were sent out by mail, and in 1942, 1944 and 1945 the reports were reviewed at meetings of the Committee of Direction.

The history of the three groups indicates a persistence of effort which, through the depression of the thirties and more through the war, has been restricted by circumstance. The groups have come through alive and well, although suppressed, with an enormous amount of work to do. Since their origin (Committee on Electricity and A. R. E. E.) the amount of electrical equipment on the railroads has increased many times and grown enormously in complexity. Things which have come into being completely since then include electric welding, air conditioning, mercury and fluorescent lighting, streamline trains, Diesel locomotives and train communication.

There is, as one man put it, scarcely a thing on the railroad now that does not have a wire on it somewhere. And in recent years railroads have had to adopt many things without the benefit of recommendations worked out by discussion among themselves. As an example, the caboose power-supply question is in almost complete chaos. There are almost as many different ideas of how it should be developed as there are railroads. Opportunity has been lacking for free discussion of railroad electrical subjects among men qualified to discuss them, and the forthcoming meeting should mark the reinstatement of an important railroad activity. Let's hope these interruptions are now a thing of the past.

35 Years as Chief Editor

It isn't often that the picture of the editor of *Railway Age* or anything about him appears in these pages. The last time it happened, if memory plays no tricks, was in 1931 when we recorded his election as chairman of our company—since which time, in addition to his editorial labors, he has been the head of the publishing business which produces *Railway Age and* its sister magazines. Now, however, the hired hands around the office feel that we must make an exception to standard practice and, without consulting the boss, pass along the word that he has completed 35 years as chief editor of *Railway Age* and its predecessor, Railway Age-Gazette. Mr. Dunn became editor of the Railway Age-Gazette in October 1, 1911, less than five years after he entered railway journalism on the staff of the Railway Age (prior to its merger with the Railroad Gazette) on January 21, 1907.

If there is any other editor of a leading industrial paper who has served so long in that capacity, and with distinction throughout the entire period, we haven't heard of him. Sam Dunn was only 34 years old when he became editor of this paper and he acquired almost at once a national reputation, which he has since maintained and enhanced, as an authority on questions of transportation economics who is both able to express himself clearly, and is not afraid to do so.

It is never possible to take note of a successful career, and just from observation, set down infallibly the complete formula by which success was achieved. There are several ingredients in the character and background of Samuel Orace Dunn, however, which quite evidently have made heavy contributions to his attainments, even though they doubtless do not account completely for

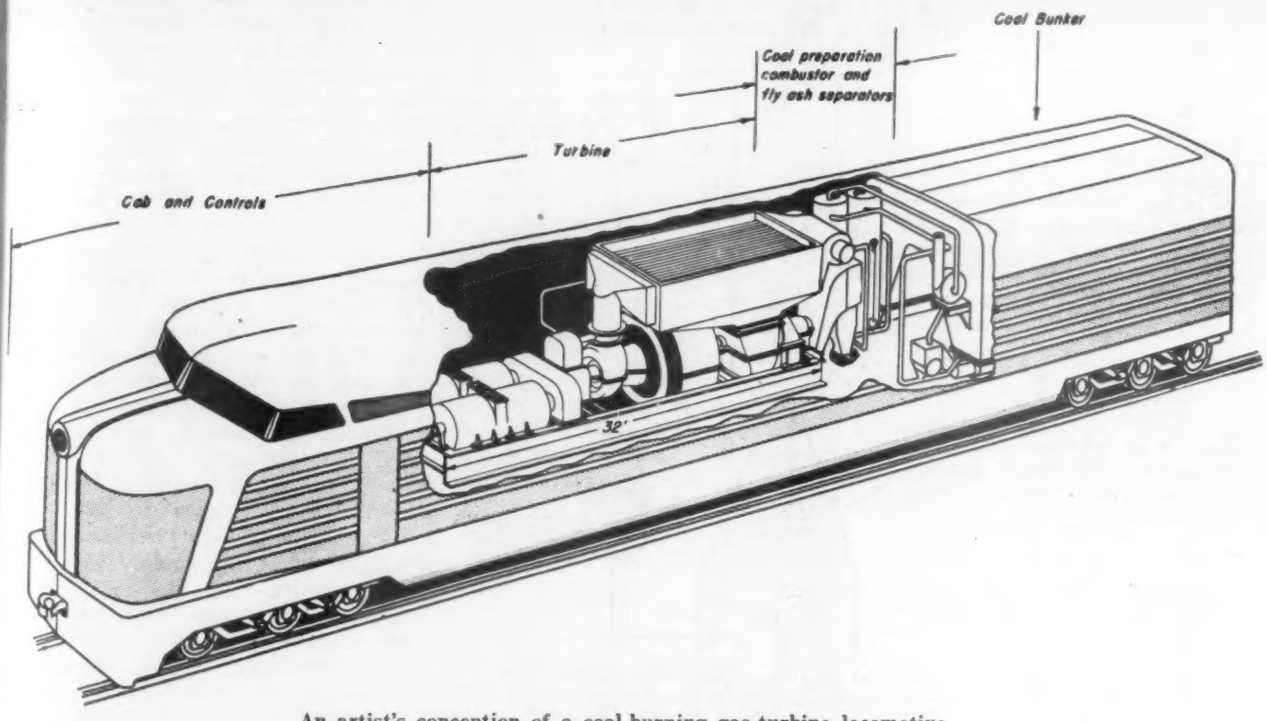
Samuel O. Dunn

them. Primary among such factors is that he was brought up a poor boy in the pioneer community of Pratt, Kansas—a railroad town. There is an old saying to the effect that, while you can take a boy out of Kansas, you can't take Kansas out of the boy—at least not the Kansas of the Pratt variety in the dozen years prior to 1895 when Sam Dunn lived there.

Sam printer's-deviled his way through high school; and started running his own weekly newspaper at Quitman, Mo., at the age of 18, transferring to another weekly newspaper at Maryville, Mo., in the following year. Sensing the opportunities in editorial work, he became aware of his need for an education to advance very far in this field, and he set out to acquire it through his own efforts, by intensive and selective reading of the world's best books. His mastery of academic subjects, especially economics, on top of his thorough performance of his daily duties, brought him rapid advancement—to reporter on the Kansas City Journal; then to editorial writer; and, finally, to editorial writer and railroad editor for the Chicago Tribune, which he left in 1907 to devote himself full-time to railroad journalism.

Habits of self-enforced discipline in study which he acquired in the process of educating himself gave him the secret of finding time to write books, prepare addresses and engage in other scholarly activities, while not permitting his routine duties to suffer. His newspaper training gave him his interest in people and his ease at making friends—a trait not too often coexisting with a studious turn of mind. Meantime, his youthful experience as an independent business man left its impress upon him, and kept his editorial and economic scholarship within limits of strict practicality. Add to this his having been bit by the railroad bug at an early age, plus the optimism which is engendered in pioneer folks who have seen unpromising plains take shape into hopeful communities in a few years' time, when men are willing to work and fight to that end—and the product of all these factors turns out to be a successful railroad journalist.

There are, of course, other ingredients that might be mentioned—among them a knack for figures, native intelligence, and a great store of energy and curiosity—but the thousands of our readers who know Sam Dunn personally can make up for our necessary frugality of space by filling out the rest of the canvas for themselves.



An artist's conception of a coal-burning gas-turbine locomotive to develop 3,000 hp. at the rail

The Coal-Fired Gas-Turbine Locomotive

Progress reported in the development of fuel system, including feeding, pulverizing, ash removal, and combustion under pressure—Each phase is subject of one or more research projects*

By JOHN I. YELLOTT and CHARLES F. KOTTCAMP

Director of Research, and Assistant to the Director, respectively, Locomotive Development Committee, Bituminous Coal Research, Inc.

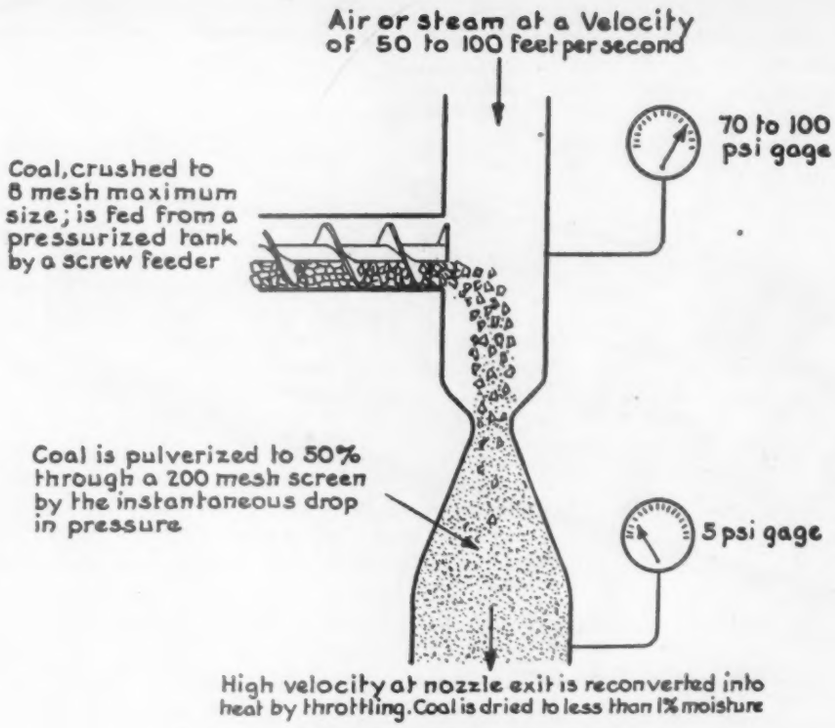
IT was a committee of the Railway Fuel and Traveling Engineers' Association, under the chairmanship of L. P. Michael, then chief mechanical engineer of the Chicago & North Western, which first explored in detail the possibilities of the gas turbine as a prime mover for locomotives on American railroads. The added incentive of the possibility of using bituminous coal as the fuel supplied the economic motivation for the program on which the Locomotive Development Committee is now engaged.

The successful application of the open-cycle gas turbine by the Brown-Boveri Company of Switzerland to locomotive drive turned the thoughts of engineers some ten years ago to the possibility of this prime mover. So rapid has been the development of the gas turbine that it is already in practical use for many applications, and it will apparently virtually dominate the high-speed aircraft field within the next several years.

The operation of the gas turbine has been adequately explained in many recent publications, although the possibilities of its use with solid fuel are only now being explored. In operation, atmospheric air, compressed to about 75 lb. per sq. in. in a highly efficient compressor, enters a heat exchanger at a temperature of about 434 deg. F. This heat exchanger transfers to the compressed air some 50 per cent of the heat available in the turbine exhaust, raising the temperature of the air to about 666 deg. F. and lowering the temperature of the exhaust, because of the cross-flow nature of the heat transfer, to about the same figure. The air is then heated by the direct burning of the fuel in the combustor, raising its temperature to about 1,350 deg. F.

If this air were to expand through an ideal turbine, 163.5 B. t. u. of work per lb. of air could be recovered. Actually, the highest efficiency attainable in a present turbine is about 86 per cent to 88 per cent, and the actual work per pound of air would be approximately 140 B. t. u. The compressor requires some 88 B. t. u. per lb., and consequently the net power of the cycle would be about 52.4 B. t. u. per lb. of air circulated. Since the air is simply thrown away after it has passed through the turbine and the regenerator, there is no need to cool it. On this basis, the cycle

* From a paper presented before the annual meeting of the Railway Fuel and Traveling Engineers' Association at Chicago on September 6, 1946.


Air or steam at a Velocity of 50 to 100 feet per second
70 to 100 psi gage
Coal, crushed to 8 mesh maximum size; is fed from a pressurized tank by a screw feeder
Coal is pulverized to 50% through a 200 mesh screen by the instantaneous drop in pressure
5 psi gage
High velocity at nozzle exit is reconverted into heat by throttling. Coal is dried to less than 1% moisture

The coal atomizer which pulverizes the crushed fuel as it is fed toward the combustion chamber

efficiency, including the efficiency of the turbine and of the compressor, would reach 29 per cent. However, the combustor cannot be assumed to deliver perfect conversion of the energy of the fuel into heated air, although a combustion efficiency of about 96 to 97 per cent is expected at the present time. Also, there will inevitably be a pressure loss between the outlet of the compressor and the inlet of the turbine. In addition, the pressure loss through the regenerator will cause the turbine exhaust to be slightly higher in pressure than the air intake.

A pressure loss of 5 per cent between the compressor and the turbine will result in a reduction of about 2 points in cycle efficiency, from 29 to 27 per cent. The loss of about 3 per cent in the combustor will reduce the probable cycle efficiency to 26 per cent. If conservatism in the metallurgical design of the turbine indicates a reduction in maximum temperature to 1,300 deg. F., the best cycle efficiency is further reduced to about 24 per cent. It can be definitely stated, however, that this value can be attained with equipment which is available at the present time. Consequently, the opinion that high efficiency can only be obtained at extreme temperatures is erroneous, for 1,300 to 1,350 deg. can readily be reached with metals which are currently in use.

It is evident from this brief analysis that the open-cycle gas turbine is worthy of very careful consideration as a locomotive prime mover. The closed-cycle type, which uses a direct-fired air heater, can be dismissed at the present time, because of the large heat exchangers which are needed, and because of the fact that water must be used to cool the air after leaving the turbine, so that it can be reintroduced into the compressor.

The single turbine system, which uses one turbine to drive the compressor and also to supply the useful load, must use a transmission similar to that employed for the Diesel. If a split turbine is employed, in which one turbine drives the compressor and another supplies useful load, direct drive becomes possible, although reversing means must also be supplied.

In developing the program of the Locomotive Development Committee, it has been definitely decided to use the conventional direct-current transmission which has so thoroughly demonstrated its reliability in the Diesel-electric locomotives. The simplicity and ready availability of the component parts of this system are considered sufficient advantages to overcome its high weight and cost. Speed control, reversing, and regenerative braking are all readily attained with this system, and consequently it can be expected that many gas turbine locomotives will use it. However, when mechanical transmission, with its lighter weight and high efficiency, can be used, it is to be expected that it will ultimately supplant the electrical type. The committee is actively investigating this possibility, following the recommendations originally made by Mr. Michael and his committee.

In establishing a program, it was found that the four major turbine manufacturers in the United States were all prepared to design locomotives which could meet railroad requirements of space and weight. Consequently, the first year of the committee's activities has been devoted entirely to developing a coal-handling system which can be applied directly to the locomotive. An obvious method of employing the heating value of coal in a turbine is to gasify the coal, and burn the resultant gas in a combustor. However, the process of gasification is a slow and costly one, and no equipment has yet been developed by which the complete conversion of coal to gas can be done within the space requirements of a locomotive. If a pulverized coal producer could be developed, with the additional development of fly-ash removing means so that the gas would be clean enough for immediate use, it would find a very ready application both to the gas turbine and to many industrial uses. Consequently, such a device is currently being studied.

The use of wayside coal preparation stations to pulverize coal, prior to loading it into special tanks on the locomotives, is not encouraging, because of the severe limitations it would place upon the usefulness of such a locomotive. Although this system was used by the Germans in their pulverized-coal steam locomotives, the committee preferred to concentrate its efforts on the development of a system which would allow the coal to be processed entirely on the locomotive. Therefore, it was assumed to be essential to find some system of pulverization which could meet the following requirements:

Pulverization Requirements

Coal of regular locomotive size and quality must be dried, crushed, and pressurized at rates up to 8,000 lb. per hour. It must be fed at a controlled rate from the pressurized storage tank into an air line, pulverized to the finest practical size, and delivered to the combustor at approximately 60 lb. per sq. in. gage.

It is to be expected that a full-load coal rate of 1 lb. or less per rail hp.-hr. will be obtained by the coal-burning gas-turbine locomotive. Depending upon the length of run which is intended, from 20 to 40 tons of coal would have to be carried to enable a 4,000-hp. locomotive to run from 10 to 20 hours at full load without refueling. This would require 800 to 1,600 cu. ft. of bunker space. If the coal is to be carried directly upon the locomotive, it is quite necessary that passage-way be provided through the bunker, to enable the crew to move from one end of the locomotive to the

other. If, in addition, it is necessary to restrict the height of the coal bunker to approximately 10 ft., and its width to about the same value, to fit locomotive space requirements, between 60 and 80 cu. ft. of bunker space can be made available per foot of length. This would require between 10 and 20 ft. of bunker space to carry the full coal requirements. Because of the necessity of carrying water for train-heating boilers on passenger locomotives, space must also be provided, in the frame or in other unused locations, for some 4,500 gal. Because of their simplicity and reliability, oil-fired train-heating boilers will probably be used on the first experimental locomotives, and approximately 500 gal. of light oil will be carried for this purpose. In later units, waste-heat boilers will undoubtedly be used for this purpose.

The Coal-Handling System

The method of pulverization which is under active consideration by the committee is the air-operated coal atomizer. This simple device requires approximately 1 lb. of air per lb. of coal, at a pressure about 80 lb. per sq. in. above the combustor pressure. The supplying of this air by a small auxiliary compressor, probably of the reciprocating type, will take about 1.5 per cent of the shaft output of a gas turbine, but it will probably result in the lowest attainable overall cost for pulverization.

In order to make the coal suitable for use with the "coal atomizer," it must be crushed and dried, so that it can be fed from the pressurized storage tank. Since very large quantities of waste hot air are available from the turbine exhaust, it seems logical to use this air for drying the coal, and also for conveying the coal after it has been crushed. Consequently, the coal will be fed from the bunker through a riser section, from which it will fall into a small motor-driven hammer mill. In this mill, it will be reduced to —16 mesh, and tramp iron will be eliminated. The drying of the coal will be done by introducing heated air into the feeding system, and, since this heated air will pick up much of the fine coal in the process, the same air will also be used to sweep the bottom of the crusher, thus picking up the remainder of the coal, and carrying it to the pressurizing system.

The coal-handling devices will be operated under a slight suction, in order to eliminate leakage into the cab of the locomotive, and thus to maintain the desirable feature of cleanliness. The suction will be produced by a combined fan and dust catcher, such equipment being available in the form of the Roto-clone, manufactured by the American Air Filter Company, Louisville, Ky.

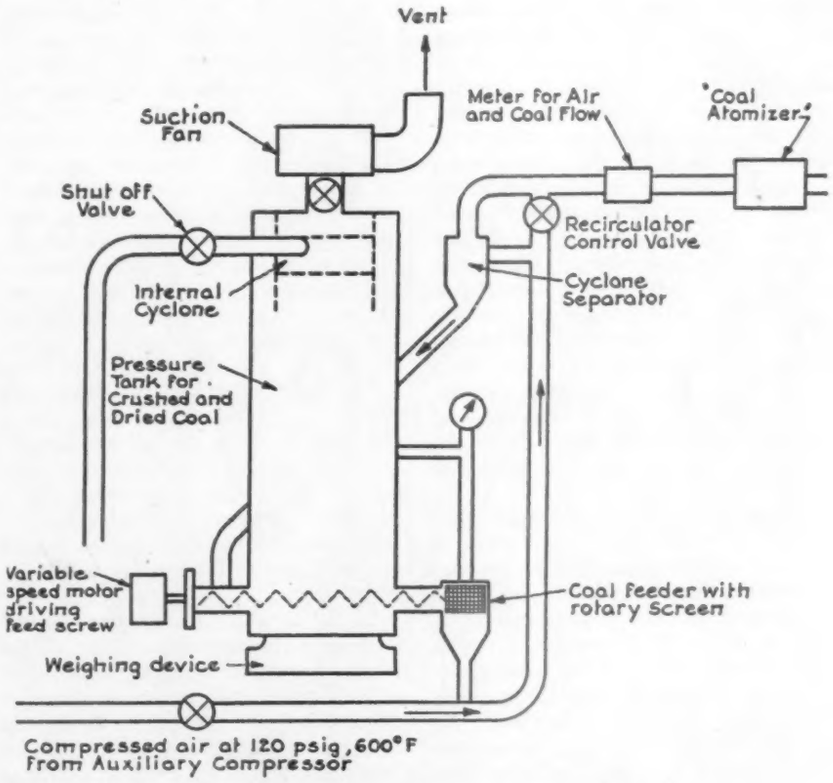
In order to be burned in the combustor of a gas turbine, the coal must be put under pressure. A number of different devices can be used for this purpose. Since the coal atomizer is to be used as the pulverizer, the maximum pressure in the pressurized storage tanks will be 140 lb. per sq. in., and consequently the pressurizing device must be prepared to work against this pressure. A number of possibilities exist, including the use of the twin-tank system, the lock hopper, and the "coal pump." With the twin-tank system, while one tank is under full pressure, delivering coal to the atomizing air line, the other is isolated from this line and coal is entering the tank through the conveying line. Because of its relative simplicity, this system is likely to be used in the first coal-burning gas turbine system.

The lock hopper, which has been used for years in the sandblasting industry, consists of two upper tanks superimposed upon a base tank. Cone valves are used in the upper two tanks, with atmospheric pressure always prevailing in the top tank, while the middle tank alternates between atmospheric and full line pressure. For stationary gas turbines, this system is likely to be widely used. The necessity for a considerable amount of head room, however, makes its use on the gas-turbine locomotive more problematical.

The coal pump consists of a screw feeder, operating at such speed that a continuously renewed plug is produced at the high-pressure end, which acts as a seal to prevent the leakage of air down the worm. This device has been under development both at the Institute of Gas Technology and at Johns Hopkins University, and it has been possible to pump coal at rates as high as 30 lb. per min. against pressures up to 70 lb. per sq. in. The Standard Stoker Company reports that, with a similar device, using improvements of their own design, they have been able to secure consistent operation against 90 lb. per sq. in. pressure. If this development can be carried to a commercially successful point, it will result in a great simplification of the coal-handling system.

The feeding of the coal from the pressure tank into the atomizing air line has in the past done by means of a small screw feeder, operating at variable speed. Because the screw feeder, particularly at low speeds, is not too reliable, a drum-type feeder will also be investigated for this service. Such feeders have been widely used in the chemical process industry for accurately controlling the feed rate of granular materials.

Since the accurate control of the rate of fuel flow is of paramount importance in gas-turbine operation, it is probable that a secondary control system will also be developed. In this system, the screw feeder would deliver the crushed coal through a rotary screen, which would serve to eliminate oversized



A proposed system for controlling the fuel fed by the recirculation method

particles. The atomizing air, supplied from the booster compressor at a pressure of 120 to 140 lb. per sq. in. gauge, and a temperature as high as 600 deg. F., picks up the coal from the feeder, and carries it up to the recirculator control valve. When full coal flow is required, this valve is opened, and the coal thus passes to the coal atomizer and the combustor.

A coal-flow meter, of the type developed by the Battelle Memorial Institute, will probably be used to give continuous indications of the rate of coal and air flow. If, because of a sudden dropping of the load from the gas turbine, the fuel must be shut off instantaneously, the recirculator valve is closed, and the coal-air stream is directed through the cyclone separator. The coal is thus separated from the air and returned to the feed tank. The air passes on into the combustor, and thence to the turbine. Intermediate settings of the control valve will result in the by-passing back to the tank of any desired portion of the fuel. The master control of turbine power, in this system, would be the recirculator control valve, and this would be air-actuated through the governing system.

Pulverization and Combustion

Pulverization of coal can be accomplished by a number of different devices. The hammer mill and ball mill have been widely applied, and they are used almost universally for large power plant applications. On the locomotive, the problem is complicated by the fact that it is desirable, for many reasons, to pulverize the coal while it is at full operating pressure. No pressurized pulverizers are on the market at the present time.

The Locomotive Development Committee has under active study the coal atomizer, a device first used at the Institute of Gas Technology in Chicago to produce finely pulverized coal for gasification. It consists simply of a nozzle which is inserted into a line through which flows compressed air at a pressure about 80 lb. per sq. in. above the discharge pressure. By causing the coal to pass through the nozzle with the air, pulverization can be accomplished through the tremendous number of internal explosions which take place when the air entrapped within the pores of the coal, seeks to expand as the pressure is reduced. By the addition of a simple attrition device, the product can be as fine as 80 to 90 per cent—325 mesh, with 5 per cent or less +100 mesh. Through the use of air at increasingly high temperatures, and by improving the attrition device, it is expected that the air consumption can be reduced below 1 lb. of coal.

Because of its simplicity and lightness, the coal atomizer appears to be the most suitable method of pulverization which has yet been proposed. Although its power consumption is higher than that used in the ordinary mechanical mill of like capacity, its simplicity and its ability to deliver coal at the proper pressure make it particularly attractive for this application.

The actual burning of coal under pressure is now receiving very active attention from the committee. Fundamental research on the burning of coal under pressure is being done at Battelle Institute, while various promising types of combustors are being tested at Johns Hopkins University. A large-scale pressure combustion laboratory is being installed at the Dunkirk Works of the American Locomotive Company, and it is expected that this laboratory will be under operation in October of 1946.

The gas-turbine combustor is unique in that the amount of excess air is far greater than that encountered in any other fuel-burning device. In order to reduce the temperature of the products of combustion to a value of approximately 1,300 deg. F., which can be successfully used with available turbine materials, six or seven times the theoretical air requirement must be supplied. Approximately 10 lb. of air is an average theoretical requirement for bituminous coal. Since this same pound of bituminus coal will produce somewhat more than 1 hp. at the shaft of the turbine, it is evident that the actual air rate of about 60 lb. per shaft hp.-hr. will result in a great excess of air over the theoretical requirement. Obviously, if an attempt is made to burn the fuel directly in the total supply of air, the flame will be so chilled that the combustion efficiency will be very low, and the flame may even be extinguished. Consequently, it is necessary to have some form of inner combustion chamber, within which the coal, with about 40 per cent excess air, is completely burned. The remaining air is ordinarily used to cool the internal combustion chamber and to mix with the products of combustion after they emerge from this chamber. High rates of heat release can be expected in the gas turbine, because of the fact that the oxygen concentration in the air is increased due to its higher pressure, and also because large quantities of excess air can be used to create a very favorable condition of turbulence.

In the development program of the committee, fundamental studies of the effect of pressure upon the combustion of pulverized coal are being made at Battelle Institute. With this single tube equipment, studies are being made to determine the flame speed and rate of heat release which can be anticipated when a pressure as high as 60 lb. per sq. in. gauge is used in the combustor. Thus far, heat releases as high as 2,000,000 B. t. u. per hr. per cu. ft. have been recorded.

Also under test at Battelle is a unique combustor, patterned after the Vortex combustion chamber originally proposed as early as 1931 by the Fuel Research Board of Great Britain. In this combustor, the fuel is admitted through a number of feed pipes which are located about midway between the center and the periphery of a cylindrical combustion chamber. Air for combustion is admitted through a series of vanes, which cause the air to spin vigorously as it passes towards a centrally located outlet. The coal particles tend to be thrown outward by centrifugal force, while the drag of the inwardly spiralling air tends to carry these particles out through the outlet. Thus, particles of each particular size will automatically take up an equilibrium position, where the centrifugal force just balances the aerodynamic drag. A rotating fuel bed, suspended in rapidly moving air, is thus produced. A heat release as high as 4,000,000 B. t. u. per hr. per cu. ft. has been obtained with this unit, and it appears to have excellent possibilities for use as a gas-turbine combustor. Tests will shortly go forward on a much larger combustor, using a 10,000 cu. ft. per min. blower to supply the necessary air.

The actual shape of the first full-scale combustor is not yet decided, although it will certainly embody the principle of an inner shell, where the coal is burned completely, surrounded by an outer shell through which the cooling air circulates. The conception of the combustor will be similar to that which has been successfully applied in oil-fired gas turbines.

The Fly-Ash Problem

The removal of fly ash from the products of combustion is a matter of the utmost importance. Tests now under way at the Institute of Gas Technology have shown conclusively that, if the fly ash is not removed, the products of combustion are extremely abrasive even to the hardest materials now employed for turbine blades. If the fly ash, on the other hand, can be removed, to such an extent that only 5 per cent to 10 per cent of the original dust loading remains, and all of the particles above 10 microns (.025 in.) are removed, then the abrasiveness of this air-dust suspension is reduced to the point where it is not expected to be harmful to gas turbine blades. In studying the problem of removing fly ash from air at 1,300 deg. F., it was immediately apparent that the usual power-plant practice of employing the Cottrell electrostatic precipitator could not be used. The temperature of the air is higher

than that which can be handled in the electrostatic unit, and the size of such units is far greater than could be incorporated into a locomotive. Filters of temperature-resistant materials are also not a practical method of ash removal, because of the fact that they would soon become clogged.

The use of a battery of small cyclone separators appeared at the outset of this investigation to be the only practical solution to the problem. In cooperation with the Aerotec Company and the Thermix Engineering Company of Greenwich, Conn., a program of investigation has been carried out which shows that small cyclone separators produced by these companies can meet the requirements of gas-turbine service. and adequate evidence is available to demonstrate that a battery of the tubes operates in exactly the same manner as the individual tubes.

It has been demonstrated that the Aerotec tube can effectively remove as much as 95 per cent of the fly ash in a hot-air stream. As the temperature increases, however, the efficiency of the tubes decreases, but this decrease can be overcome by increasing the velocity of the air passing through the tube. For a given velocity, the pressure drop through the Aerotec tube varies directly as the density of the air. Thus, a 10-in. pressure loss at atmospheric pressure and 1,000 deg. F. corresponds to a loss of about 1 lb. per sq. in. at full gas turbine operating conditions. Since pressure loss between the combustor and the turbine is very harmful to efficiency, it is expected that a compromise will be established, resulting in the removal of about 90 per cent of the fly ash, and restricting the pressure loss to about 1 lb. per sq. in.

Variations in dust loading over a wide range are not harmful. It is expected that, with 10 per cent ash in the coal, the dust loading coming to the separators will be about 2 grains per cu. ft. This can easily be reduced to 0.2 in the air coming from the separator.

Dust tests are being carried out, using a number of turbine-blade materials as test specimens. Uncleaned air is found to be extremely abrasive, and it is capable of drilling holes through flat test specimens in a short period of time. The abrasiveness of the air is reduced by a factor of at least 100 when the Aerotec separator is used to remove most of the dust, including all of the larger particles. During the coming year, work on the removal of fly ash will be continued, to test other promising types of cyclone separators, and to determine the economical limits beyond which it is not necessary to go in the removal of fly ash.

The disposal of the fly ash after it has been separated from the products of combustion is also undergoing serious study. It has been recommended that sufficient capacity be carried on the locomotive to render unnecessary the discharge of fly ash between locomotive terminals. The dumping of the powdered ash overboard at random cannot be tolerated, because of the fact that it would find its way into the air-conditioning system of the following cars, as well as producing a nuisance along the right of way. The fly ash could be discharged in the form of the slurry if adequate water were available, but this would necessitate the carrying of an unnecessarily large quantity of water. Compacting of the ash and discharging it in the form of pellets would produce a hazard at high speeds.

The use of fly ash for rail sanding has been suggested, and it is under study at Purdue University, using a regular brake-testing machine. It is probable that, on the first experimental locomotives of the committee, ash storage capacity will be provided in which the ash resulting from the full load of coal can be accommodated, without the necessity of intermediate disposal.

Two Gas Turbines Ordered

The gas turbine forms a particularly effective prime mover for locomotive service because of its extremely light weight and relatively small size. Turbines proposed by the Allis-Chalmers and the Elliott Companies are now on order, and delivery is expected late in 1947. Each turbine will be capable of producing at least 3,750 shaft hp. and the full-load coal consumption of each is considerably less than 1 lb. of 13,500-B. t. u. coal per shaft hp.-hr.

The Allis-Chalmers unit uses the axial compressor, the efficiency of which has been adequately demonstrated in many oil-refinery units as well as in the high temperature experimental unit in the Naval Engineering Experiment Station at Annapolis. Efficiency on similar compressors has been reported as high as 85 to 86 per cent. Five stages of reaction blading will be used in the gas turbine, and the four 1,000-hp. generators will be driven at approximately 1,000 r. p. m. by a single reduction gear.

The Elliott turbine will employ a two-stage centrifugal compressor, which will enable the unit to be built with only two bearings. Because of its unique design, the Elliott unit will eliminate high-pressure seals, thus compensating in part for the lower compressor efficiency which is to be expected from the centrifugal design. The Elliott unit is characterized by extreme lightness, since the prime mover and generator together will weigh only about 17 lb. per hp.

The actual design of locomotives to use the Allis-Chalmers and the Elliott turbines will be undertaken in the near future by the three major steam locomotive builders. A set of tentative specifications has been suggested by the Mechanical Advisory Board. The locomotives will be double-ended, thus eliminating the necessity of turning them at the end of a run. A maximum range, without refueling, of about 1,000 miles will be provided. A train-heating boiler of conventional type will be used, and the oil supply for this boiler will also be used as pilot fuel in the main combustor, and as fuel for the small auxiliary Diesel engine which will be used to start the main turbine. The conventional direct-current transmission system will be controlled by the engineman in a manner quite similar to that now used on the Diesel-electric locomotives.

It is expected that the duties of the fireman will be no more arduous than those which he now performs on the Diesel. The operation of the coal-handling equipment will be almost entirely automatic, and there will be very little for the fireman to do in the operation of the gas turbine itself. Conventional air-brake equipment will be used, with the air compressor driven from the main power unit. A small auxiliary generator will be used, together with a battery which will provide power during periods when the main turbine is not in operation. Serious thought will be given to the use of alternating current as a power supply for the auxiliaries, in order to eliminate the maintenance which would otherwise be necessary for the direct current motors which would be used to drive the coal-handling equipment.

The general appearance of the locomotive will be similar to the artist's conception shown in the illustration. Wind-tunnel tests will be conducted in the near future to determine the best shape for the locomotive, bearing in mind that approximately 100,000 cu. ft. per min. of air must be taken in to supply the main turbine and the traction-motor cooling requirements. Induction of this air at the proper place on the surface of the locomotive may result in a useful reduction of the power required at high speeds.

Future Developments

In looking towards the future, it can be predicted that larger units, with two turbines, capable of producing 6,000 rail hp. or more, will be in use. The new mechanical transmission, when it has been sufficiently developed, will remove the necessity of uesing the heavy and expensive electrical transmission which the first units will employ, and a considerable saving in efficiency at high

(*Continued on page 560*)

"Investors' Share" Inaccurately Reported

I. C. C. attributes to security owners revenues they never actually receive and thus minimizes ratio paid to labor

[We have agreed to protect the anonymity of the writer of this article, a railroad financial analyst of integrity and long experience. In fairness to the staff of the I. C. C., whose statistical practices he criticizes, we offer similar space and anonymity to any one of them who may care to defend the course the I. C. C. has followed.—EDITOR.]

ACCURATE official figures are not available on the proportion of aggregate railroad earnings distributed as between the two co-partners in the enterprise—labor and the investor. This lack of dependable information appears particularly unfortunate in view of the new economic philosophy advanced during the past year by union leaders and members high in the federal government, especially in connection with the automotive industry's labor disputes, to the effect that wages should be based on capacity of the industry to pay. That the subject will assume further importance is implied in President Truman's request of the Congress for prompt legislation requiring employers to disclose their books to "fact-finding" boards in industrial disputes because "ability to pay is always one of the facts relevant to the issue of an increase in wages."*

It is possible that one of the reasons the railroads have not had more favorable consideration in recent Congressional legislation, in wage negotiations, and in rate cases before the Interstate Commerce Commission is the lack of adequate information on this important aspect of railroad affairs. In each of its last eight reports to Congress the Commission has submitted a summarized tabulation purporting to show the proportion of railroad earnings consumed by wages, and what remains as the "Investors' Share," and on the strength of such data has advised the Congress in four of these eight annual reports that the investors' share or proportion has increased relative to wages and salaries paid.

Examination of the details of the Commission's computations reveals what appears to be a misapplication of data which, upon appropriate adjustment, bring out facts which do not support the Commission's conclusions. Analysis and restatement of the data used by the Commission discloses that earnings distributed to the investors have *decreased* consecutively during each of the last 14 years with one exception, whereas wages have consistently *increased,* and during the last two years were at new peak levels, both relatively and absolutely, as shown in Table II herewith.

The disparity in the results of the two computations arises in part because of different interpretations of what constitutes the "Investors' Share" and in part to apparent misuse of certain items in the Commission's analysis. The summarized tabulations compiled by the Commission are broken down herewith in Table I to show details of 45 individual items comprising the totals.

Specific Examples

The following items, respectively numbered as in Table I, are selected for comment to illustrate the questionable, if not incorrect, use made of certain charges in arriving at the Employees' and Investors' Shares.

Item 17—Pensions and Item 23—Unemployment Insurance and Retirement Taxes: To classify pensions and social security taxes based on payrolls as part of operating expenses or taxes, rather than as part of the distribution to labor, is to ignore realities. It is difficult to understand the Commission's reason for excluding such costs from labor's share ($218,921,000 in 1943) in the face of its own repeated observations that such payroll taxes "logically are an addition to wages."

Item 28—Wages and Salaries Chargeable to Operating Expenses: One might inquire why, if the Commission includes as part of the "Investors' Share" various capital charges, it does not include as part of the distribution to Labor that part of the wage bill chargeable to capital account. Over a period of years such additional wages averaged 6 per cent of wages charged to operating expenses and in 1943 amounted to $175,610,000.

Furthermore, inquiry may be directed to the reason for omitting from Labor's portion the substantial amounts of back pay resulting from the continuing decisions of Wage Boards and other awards during recent years. To omit such wages, $3,868,500 in 1943 and $140,245,000 in 1944, from the computations, without even an explanatory footnote

Table I—Details of Statement Used by Interstate Commerce Commission to Show Distribution of Earnings as Between Wages and the "Investors' Share," Class I Railroads, 1943

Item No.		
1.	*Operating Revenues:*	
2.	Freight	$6,782,469,871
3.	Passenger	1,652,867,835
4.	Express	127,816,688
5.	All Other	491,569,990
6.	Total Operating Revenues	9,054,724,384
7.	*Other Income From Non-Operating Sources:*	
8.	Dividend income	65,843,806
9.	Income from funded & unfunded securities	45,141,070
10.	Miscellaneous	90,254,212
11.	Total Other Income	201,239,088
12.	Sum of Operating Revenue and Other Income	$9,255,963,472
13.	*Selected Operating Expenses:*	
14.	Fuel, material and supplies	1,718,602,550
15.	Loss & damage, injuries, insurance & advert.	129,591,378
16.	Depreciation and amortization	461,545,982
17.	Pensions	7,313,190
18.	Sum of Above Selected Operating Exp.	2,317,053,100
19.	Hire of Equipment—(Net dr.)	148,326,526
20.	Joint Facility Rents—(Net dr.)	39,972,999
21.	*Railway Tax Accruals:*	
22.	Federal Inc. — Normal, Surtax & Excess Profits	1,335,123,475
23.	Unemployment Ins. & Old Age Retirement Taxes	211,607,881
24.	All other tax accruals	302,463,801
25.	Total Taxes Accrued	1,849,195,157
26.	"Total Deductions"	4,354,547,782
27.	"Remainder Avail. For Employees & Investors"	4,901,415,690
28.	"Wages & Salaries Chargeable to Oper. Exp."	3,340,408,181
29.	"Percent—Wages and Salaries"	(68.1)
30.	Balance or "Investors' Share"	1,561,007,509
31.	"Percent—Investors' Share"	(31.9)
32.	*Breakdown of "Investors' Share":*	
33.	Miscellaneous Deductions	
34.	Expenses of miscellaneous operations	7,101,455
35.	Taxes on miscellaneous operating property	1,392,867
36.	Miscellaneous tax accruals	4,267,844
37.	Miscellaneous rents & income charges	28,257,415
38.	Total Miscellaneous Deductions	41,019,581
39.	Rent for Leased Roads & Equipment	166,589,456
40.	Interest on Funded Debt	421,781,193
41.	Interest on Unfunded Debt	7,087,180
42.	Amortization of Discount on Funded Debt	1,620,243
43.	Contingent interest on Funded Debt	21,586,230
44.	Dividend Appropriations from Income & Surplus	216,543,689
45.	Miscellaneous Appropriations & Balance to P/L	684,279,937
	Total "Investors' Share" as above	$1,561,007,509

* Extract from President Truman's Statement issued December 20, 1945: "In appointing a fact-finding board in an industrial dispute where one of the questions at issue is wages, it is essential to a fulfillment of its duty that the board have the authority, whenever it deems it necessary, to examine the books of the employer. That authority is essential to enable the board to determine the ability of the employer to pay an increase in wages where such ability is in question. Ability to pay is always one of the facts relevant to the issue of an increase in wages. . . ."

is not helpful to a complete presentation of the facts.

Item 30—"Investors' Share": Even if one were to disregard the foregoing items, to term the earnings remaining after deducting the expenses and taxes shown as the "Investors' Share" reflects interpretation and reasoning with which it is impossible to agree, as subsequently discussed herein. First, several of the items grouped under the "Investors' Share" appear in need of examination.

Items 33 to 38—Miscellaneous Deductions: This group of deductions relates to Miscellaneous Income From Non-Operating Sources (Item 10) included in Operating Revenues and Income (Item 12). Both such Miscellaneous Income and Deductions arise principally in connection with various non-railroad operations, such as coal mines, timber lands, oil wells, stock yards, grain elevators, warehouses, piers, docks, hotels, real estate, etc. The deductions consist in substantial part of expenses of such miscellaneous operations, losses sustained from separately operated properties, and, as shown in Items 35 and 36, taxes. Nonetheless, under the method used by the Commission $41,019,581 of such Miscellaneous Deductions in 1943 are classed as part of the "Investors' Share." Accepted practice is to offset such deductions against miscellaneous income and thus obtain a net balance.

Item 39—Rent for Leased Roads: As appears in Table I the railroads in 1943 were charged $166,589,000 for rental of leased roads and equipment, the latter item being of minor significance. Actually, investors in the leased companies received only about $100,000,000 or 60 per cent of the amount shown as dividends and interest, the difference of almost $66,000,000 being accounted for in part as follows:

Accrued But Not Paid

First, a portion of the $166,589,000 rentals charged against the parent railroad represents about $69,250,000 interest accrued, not interest paid, on bonds of lessor companies. The fact is that of such interest charges in 1943 approximately $11,000,000 represents accruals on the part of the Old Colony R. R., Seaboard All-Florida Ry., and many other bankrupt lessors of railroads in the hands of the courts—interest, in brief, which it may be safely assumed will never reach any investor.

Secondly, a portion of the rentals represents a cash rental payable to the lessors under lease or contract. By no means, however, does it follow that such cash receipts have been or will ever be distributed to investors. Thus Southern Pacific Company, for example, was charged with $46,616,000 rentals in 1943, but investors received only 40 per cent thereof, the balance being reinvested in the leased properties under terms of lease.

Third, a portion of the gross rentals represents mere intercorporate bookkeeping in which the investing public never participates. To illustrate, in 1943 the Pennsylvania accrued $49,353,000 rentals for leased lines but $27,252,000 or 55 per cent thereof was merely paid to itself as owner of the bulk of the lessors' securities. Whether or not such intercompany payments and receipts ultimately accrue to the benefit of investors will be discussed subsequently. In any event, correct accounting procedure would suggest elimination of intercompany payments and receipts.

Finally, approximately $5,000,000 of the rentals consist of income taxes payable by the lessors. It should require no argument that such taxes are no part of the investors' share. According to such reasoning it could be held, for example, that the $2,340,000 rental paid by New York Central to Mahoning Coal Railroad in 1943 went to the latter's investors whereas the fact is that 60 per cent thereof was paid to the government as federal income taxes.

Items 40 and 43—Interest on Funded Debt: Of the $443,367,000 interest charged to these two accounts in 1943, $83,660,000 represented accrued, but unpaid, interest on the part of roads in receivership or trusteeship, interest which may never be paid except in the form of stocks or other junior securities to be issued in reorganization. To illustrate, for the last 15 years the St. Paul has been accruing $9,144,000 interest annually on its $182,873,000 Adjustment Mortgage 5 per cent Bonds, although not one cent thereof has been paid or received by bondholders and never will, since in the reorganization plan each holder of $1,000 of such bonds was issued 11.47 shares of common stock which, even under current large earnings, stands in little prospect of a divided return.

Item 45—Miscellaneous Appropriations of Income and Income Transferred to Earned Surpus: Included in these items are applications to sinking* and other special funds under terms of mortgages or other contracts; appropriations for construction, acquisition or improvement of roadway, equipment and other physical properties, and for other fiscal purposes, which in the judgment of the directors are deemed essential to the welfare of the corporation rather than distributable as dividends. To include all appropriations appearing under this heading as part of the "Investors' Share" is to follow a traditional concept in corporation finance but which, as it applies to the railroads, has lost validity.

The underlying theory is that such "surplus" earnings, applied to the physical properties or other corporate needs ultimately redound to the benefit of railroad investors. Whereas this theory may well apply in the experience of growing industries—oils, chemicals, automotive, and now aviation, television, etc., it is demonstrably inapplicable to an old industry which suffers some obsolescence through advance of competitive factors. Indeed, during the years of expansion and development of railroads prior to the first World War consistently increasing dividend payments attest the soundness and advantages of applying part of surplus earnings to improvement of the properties.

However, during the last thirty years vast outlays, not only from current earnings but even from new capital, have been productive of not one dollar of additional return to railroad investors. To the contrary, despite the *net* increase of about ten billion dollars in property investment, the dollar returns of both interest and dividends as well as the percentage return on the expanded and developed properties are substantially lower today, even under the record-breaking traffic load of the past five years, than prevailed thirty years ago. In the circumstances it is to lapse into academic theory to hold that all earnings remaining after actual payment of interest or dividends ultimately accrue to the benefit of investors.

When More Earns Less

The point may be illustrated concretely in the light of the actual record since the year 1928. During this 17-year interval there was an increase in recorded property investment of $3,000,000,000, which is the net increase after concurrent retirements of approximately $5,000,000,000. Excluding the latter on the ground that they are largely bookkeeping transactions and represent cash only to the extent of recoverable salvage, the increase in gross additions and betterments during the period amounted to not less than $8,000,000,000.

Inasmuch as the aggregate railroad mileage had decreased 10 per cent since 1928 it is apparent that the eight billion dollars have been devoted to developing, improving and modernizing the existing plant and equipment in the interest of greater productivity and better service to the public. Nonetheless, the data set forth in Table II clearly confirm that, if there has been improved efficiency, the investing public received 358 million dollars or 32 per cent *less* in 1945 than it did from the old plant 17 years ago, whereas labor received $1,276,733,000 or 48 per cent *more* as its

* Incidentally, although sinking fund payments are a charge upon earnings ranking prior to dividends, it is impossible to ascertain from the voluminous annual reports of the Commission the aggregate payments into sinking funds required by the Commission and presently amounting to perhaps as much as $40,000,000 annually.

share. The obvious conclusion is that labor, not the investor, has benefited from the eight billion dollars expended upon the properties through the investors' sacrifice of current earnings and investment of new capital.

The impropriety in use of the term, "Investors' Share," may be demonstrated in the case of two specific railroads—one still eminently sound, the other a pitiful bankrupt.

Pursuing its historic policy of "A dollar of dividends, a dollar for the property," during the last twenty years the Pennsylvania distributed to its stockholders an aggregate of $507,000,000 dividends while ploughing back into the properties $516,000,000 of surplus earnings of the so-called "Investors' Share." The significant effect of this 20-year interval in which some 200,000 stockholders sacrificed of their "share" more than they actually received, in the interest of a more modern and efficient transportation system, including the huge electrification program which, incidentally, was pushed forward during the depression of the 1930's in response to an urgent personal plea of the President of the country that the railroads "cooperate in the maintenance of employment," has been that the investors in the Pennsylvania received in 1945 $17,000,000 *less* interest and dividends than in 1926 while the employees' share *increased* by $132,600,000 during the same period.

With respect to the bankrupt Central of New Jersey it could be said, according to the Commission's terminology, that during the last seven years the "Investors' Share" of that railroad's earnings amounted to $34,282,000, notwithstanding the fact that meanwhile not one cent has been paid to the holders of its $49,000,000 mortgage bonds or its $27,436,000 capital stock. Meanwhile, during the 7-year interval of waiting for a distribution of their "share" of earnings the investors witnessed the additional expenditure of more than $16,000,000 upon the physical properties; the employees received as their share an aggregate of $170,000,000; the public presumably received improved service; the investor received nothing.

Deferred Expense Included

The unlikelihood that these investors will ever receive any part of their "share" follows from the fact that the road is so completely bankrupt as to preclude the preparation of an adequate plan of reorganization, and since the company concedes that the properties subject to the mortgage bonds "actually lose money" it may well be that in the reorganization the bondholders will receive stock and the present stockholders be wiped out.

Incidentally, the basic weaknesses in the Commission's use of the term "Investors' Share" are heightened by the fact that this so-called "share" includes a vast amount of maintenance deferred during the war period because of lack of materials and shortage of labor. Such deferred maintenance for all Class I railroads has been estimated by the Commission's Bureau of Valuation "as amounting to $350,000,000 at the close of 1945 . . . principally for rail, ties, track material, and ballast."* It seems an error to interpret such a deferred charge as part of the "Investors' Share," particularly in view of the fact that to the extent of at least 40 per cent thereof Labor will be the direct beneficiary in the form of wages when such deferred maintenance is made up, whereas the investor, as in the past, must hopefully await the day when such additional maintenance may be translated into earnings, although the incontrovertible record over the years is evidence that his is merely a hope long deferred.

In view of the foregoing, it is a reasonable conclusion that, actually the "Investors' Share" is nothing more than the interest or dividends actually received by investors. Accordingly, the calculations of the Commission as submitted annually to the Congress are restated in Table II by substituting actual *distribution* to investors for the so-called "Investors' Share" and by making only the following three more obvious adjustments:

Items 17 and 23—Pensions and Payroll Taxes are included as part of Labor's Share;

Items 33 to 38—Miscellaneous Deductions are offset against Non-Operating Income;

Items 40 and 43—Interest accrued but unpaid is eliminated from the Investors' Share.

The outstanding fact revealed in Table II is the alarming downward trend in the proportion of earnings distributed to the investor. During the 18-year period under review, while labor's share *increased* from 64.4 per cent to 77 per cent of the income balance, the distribution to investors *decreased* from 26.9 per cent to 14.7 per cent, dropping annually for the last 14 consecutive years with one exception. That the ratios of distribution prevailing in the earlier years will never be restored may be assumed in the light of the fact that during the last five years basic wage rates were advocated materially on three separate occasions while the burden of social security taxes, already equal to more than 6 per cent of payroll, will be further increased at the end of the current year under legislation recently enacted.

Unfortunately, however, even the foregoing falls short of presenting adequately the facts with respect to what constitutes the respective shares of Labor and the Investors in railroad earnings. A correct conclusion requires first a definition of the two all-important terms—Investor and Income. For example, it is essential to distinguish between the aggregate investment in the industry and the public's investment. Inasmuch as the railroads themselves own approximately one-fifth of outstanding debt and 30 per cent of capital stock it follows that a substantial part of interest and dividends is paid back to themselves and forms no part of the receipts by public investors. Such intercorporate payments and receipts in the case of the Pennsylvania, cited above under Item 39, have had no noticeable effect upon the $17,000,000 decrease in interest and dividends received by its public investors, as discussed under Item 48.

Intercompany Dividends

Similarly, two-thirds of Reading's dividends are paid to Baltimore & Ohio and New York Central, three-fourths of Texas & Pacific's dividends are paid to the bankrupt Missouri Pacific, and so on, but it would be difficult to prove in the light of past record that the public has even indirectly received or will ever receive the benefit of such intercompany dividend payments. Wages, on the other hand, are cash charges payable directly to railroad employees. Hence, to show correctly the proportion received by public investors it is essential that the railways be treated as a system, with elimination of intercorporate payment and receipt of interest and dividends.

Equally important to a factual case in the matter of distribution of railroad income is a consolidation of all railway operations. To exclude from railway accounts the operating results of their wholly-owned subsidiaries—Railway Express Agency, Inc., truck and bus companies, freight car lines, joint terminal, switching, forwarding and other companies, is to omit an essential and extensive part of railway operations. This is particularly true in a comparative analysis extending over a period of years because an increasing proportion of transportation functions has been assigned to such agencies during the last fifteen years.

Inasmuch as their costs, particularly wages, have mounted at least as rapidly as those of the railroads, with corresponding diminution of the return to the parent companies, it is clear that any attempt to portray accurately the division of true earnings as between Labor and the Investor must comprehend the entire railway operation, as may be illustrated by a few examples.

Item 4—Express Revenue: Under I. C. C. accounting requirements the

* Fifty-Ninth Annual Report to Congress, p. 8.

railways include express "revenue" as part of their gross revenues. This item is a misnomer in that it is in no sense gross revenue. Actually it is the net income from the separate operations of their wholly-owned subsidiary—Railway Express Agency, Inc. To include such net income as part of railroad operating revenues is to show, in 1943 for example, $127,816,688 express revenue produced without any apparent operating expenses, which disappear in the accounting legerdemain. Actually the Agency had $353,587,000 gross transportation revenue which, after distributing $161,613,000 to labor as wages and payroll taxes, plus other necessary costs, left a balance of $136,000,000* payable to the owner railroads toward their expenses of conducting the service on their lines.

Inasmuch as the Agency's expenses, due to consistently rising wages and payroll taxes, have consumed increasing proportions of its gross revenues ever since 1929 when acquired by the railroads, it follows that the balances accruing to the railroads have been diminishing in corresponding amounts. It can be shown that from 1929 to 1941, that is, prior to the inflated conditions incident to the war, labor's proportion *expanded* from 104 to 106 millions, whereas the railroads' balances *shrank* from 149 to 59 millions. Stated otherwise, labor's portion increased from 40.9 per cent to 63.7 per cent, that of the railroads dropped from 58.3 per cent to 35.6 per cent of available income.

Item 19—Hire of Equipment: A substantial part of the debit balances in hire of equipment arises in connection with payments for use of cars owned or leased by Pacific Fruit Express Co., Fruit Growers Express Co., and six other so-called "private" refrigerator car lines owned by the railroads, jointly or individually. They are mere corporate and operating agencies of the railroads. The source of their revenues is the intercorporate payment of mileage or per diem rents by the railroads. The alternative to having separate subsidiaries conduct the service, as do Union Pacific, Southern Pacific, Burlington, Great Northern, and others, is for such roads themselves to own, maintain and operate refrigerator cars, as do the Atchison or the Northern Pacific.

Car Lines and Terminals

Hence, the eight car lines are only intermediate operating agencies of the railroads. In their absence the $55,250,000 gross revenues accruing to them in 1943 would accrue directly to the railroads, the wages of their 9,370 employees would become part of the railroads' wages, and dividends now receivable by the parent companies would disappear as such. Considering the fact that wages, an important item of expense to the car lines, have advanced sharply since 1929,† when the present charges of the refrigerator car companies were determined by the Commission, that social security taxes have been introduced, that income taxes as well as other costs have mounted, it is obvious that the owners' share of earnings has diminished, and hence a correct presentation of the distribution of railroad earnings as between labor and the investor requires a consolidated statement of revenues and expenses of the railroads and their car hire agencies.

Item 20—Joint Facility Rents: In virtually every city in the country served by more than one railroad there are joint passenger and freight terminals, including the costly terminals reared since 1929, often under pressure of local civic pride, at Chicago, Cleveland, Cincinnati, Buffalo, Los Angeles, and other cities. These facilities are owned and operated by and on behalf of the railroads as an integral and essential part of their transportation functions. Nonetheless, under I. C. C. accounting requirements, the 140 corporate shells representing these joint enterprises file individual performance reports as Switching and Terminal Companies, and their net results appear in the parent railroads' accounts as a nondescript item—Joint Facility Rents. In most instances such rents are adjusted by payments on the part of the owner railroads sufficient in amount to enable the joint company to report no income loss.

The importance of those joint agencies is indicated by the fact that 25 of them, such as, Indiana Harbor Belt, Chicago & Western Indiana, Kansas City Terminal, Terminal Railroad Association of St. Louis, Kentucky & Indiana Terminal, and others, are larger than a dozen or more of the companies termed by the Commission as Class I Railroads. Although their principal operating expense

* The difference between $136,000,000 net earnings and $127,816,688 express revenue reported by the railroads is due to variation in methods of accruing the payments to be received by individual railroads.

† When refrigerator car company costs were computed in 1929 the common labor wage rate paid by those companies ranged from 15 to 30 cents an hour, whereas now the minimum rate for such labor is 75½ cents an hour.—From recent testimony of R. G. Shorter, Comptroller of Fruit Growers Express Co., Western Fruit Express Co., and Burlington Refrigerator Express Co. at Hearings in Ex Parte 162, "Increased Rates and Charges, 1946", August 8, 1946.

Table II—Distribution of Income As Between Labor, Investors, and Corporate Needs of the Properties, Class I Railroads

(dollars in thousands)

Calendar Year	Sum of Operating Revenues & Other Income (a)	VARIOUS OPERATING COSTS & TAXES: Materials and Supplies (b)	Depreciation (c)	Equipment Hire & Jt. Facility Rents	Taxes Excl. Payroll Taxes	BALANCE OF INCOME	DISTRIBUTED TO LABOR AS WAGES & PAYROLL TAXES	% of Inc. Bal.	DISTRIBUTED TO INVESTORS AS INTEREST AND DIVIDENDS	% of Inc. Bal.	BALANCE AVAILABLE FOR FISCAL NEEDS OF PROPERTIES
1928	$6,407,063	$1,535,501	$ 241,719	$119,865	$ 389,432	$4,120,546	$2,652,353	64.37	$1,108,024	26.89	$360,169
1929	6,616,124	1,547,000	259,375	123,921	396,683	4,289,145	2,699,681	62.94	1,172,910	27.35	416,554
1930	5,618,251	1,292,208	243,253	131,787	348,554	3,602,449	2,395,468	66.50	1,174,327	32.60	32,654
1931	4,468,815	1,004,249	221,611	134,721	303,528	2,804,705	1,997,715	71.23	975,152	34.77	(168,162)
1932	3,326,360	725,523	209,111	120,854	275,135	1,995,677	1,468,811	73.60	722,497	36.20	(195,631)
1933	3,291,723	679,538	199,917	121,045	249,623	2,041,600	1,369,777	67.09	703,112	34.44	(31,289)
1934	3,455,963	756,873	192,387	126,301	239,625	2,140,777	1,492,563	69.72	718,767	33.58	(70,730)
1935	3,619,371	826,255	194,625	121,221	236,945	2,240,325	1,571,861	70.16	685,094	30.58	(16,630)
1936	4,216,064	962,536	193,501	134,209	254,233	2,671,585	1,840,907	68.91	726,219	27.18	104,459
1937	4,315,664	1,039,595	197,035	131,135	261,014	2,716,885	1,947,086	71.67	705,724	25.98	64,075
1938	3,696,098	856,322	201,825	129,636	241,625	2,266,690	1,763,208	77.79	575,485	25.39	(72,003)
1939	4,130,968	949,690	201,852	132,288	250,129	2,597,009	1,872,217	72.09	631,835	24.33	92,957
1940	4,438,004	1,023,110	205,860	128,655	279,964	2,800,415	1,976,878	70.59	628,305	22.44	195,232
1941	5,485,189	1,227,665	233,340	136,982	409,102	3,478,100	2,341,355	67.32	698,441	20.08	438,304
1942	7,599,464	1,489,382	338,181	181,387	1,027,821	4,562,693	2,944,532	64.53	810,610	17.77	807,551
1943	9,214,943	1,839,391	465,525	188,300	1,637,587	5,089,140	3,564,153	70.03	748,635	14.71	776,352
1944	9,606,760	2,082,297	540,461	202,357	1,615,093	5,166,552	3,890,255	75.30	786,449	15.22	489,848
1945	9,068,747	2,166,405	1,186,835	174,966	594,835	4,945,706	3,929,086	79.44	750,398	15.17	266,222
1945 (d)	.....	.....	593,000	.....	1,029,000	5,105,376	.....	76.96	.....	14.70	426,000

Parenthesis indicates deficit.

(a) Other Income is net after Miscellaneous Deductions.

(b) Includes Loss & Damage, Injuries to Persons, Insurance, and Advertising in amounts equal to about 6% of the totals shown under Materials and Supplies.

(c) Includes Amortization of Defense Projects as follows: $91,958,871 in 1942; $145,582,918 in 1943; $191,047,749 in 1944; $825,097,779 in 1945.

(d) 1945 figures restated to allow for extraordinary charges to amortization of defense projects and concurrent credits to income tax accruals, in accordance with I. C. C. formula.

is wages, only a portion thereof appears in the operating expenses of the parent companies. Inasmuch as these agencies have felt the influence of increasing labor costs fully as much as have their proprietors, to refrain from consolidating their operating results with those of the parent companies is to ignore an important element of essential expense to the latter and cannot lead to a proper appraisal of the relative proportions of railroad earnings distributable to labor and the investor.

In addition to the foregoing, other railroad functions have been transferred to separately operated agencies. Motor truck subsidiaries have been formed to handle l. c. l. freight and bus lines to handle passengers, invariably on secondary or branch lines in substitution of costly rail service. Subsidiary or contract truck operations perform pick-up and delivery service at terminals, and forwarding companies engage in consolidating freight into carload lots.

Reductio ad Absurdum

The mere transfer of these costly operations from the parent railroad's accounts to those of subsidiaries may improve the reported operating results of the parent, but a consolidated statement of revenues and expenses may well reveal a net loss since the subsidiary carriers have been subjected to increased costs due to higher wages, payroll taxes, reductions in hours worked per week, vacations with pay, changes in working conditions, etc., in proportions at least as great as those of the parent railroads. As recently found by the Commission, "motor carriers of general freight in 1945 had an average operating ratio of 100.3 . . . this upward trend in operating ratios of motor carriers is continuing," and freight forwarders testified that the recent "wage increase is far in excess of their present net income."*

For purposes of demonstrating the unsoundness of excluding the subsidiary companies, one may carry the analogy to an absurd extreme by assuming that much more of the railroads' business be transferred to agencies or contractors somewhat as follows: Pullman Company would take over all the remaining passenger business now handled by the railroads. Subsidiary or contract truckers would perform all l. c. l. and short-haul freight. All equipment would be leased to, maintained and operated by so-called private car lines. Roadway maintenance would be let to independent contractors. In that event, the bulk of the railroads' expenses, principally wages, would merely be transferred from their own accounts to those of the agencies or contractors while the railroad "Investors' Share" would constitute a fantastic proportion relative to remaining wages.

Thus it appears that the Commission's computations with respect to distribution of railroad earnings as between employees and investors do not reflect actualities, first, because of inappropriate treatment of pensions, payroll taxes, interest accrued but in default, and other accounts discussed in the above, and secondly, because the true share of labor and the investors is concealed in present accounting procedure and can be ascertained only in a consolidated operating statement of the parent railroads and their subsidiary agencies.

Certain it is that the term "Investors' Share" is unacceptable as a measure of the share actually received or receivable by investors, as proved by the record extending over a period of many years.

* Ex Parte Nos. 148-162 Decided June 20, 1946.

* * *

L.M.S. Presents Its "Bread and Butter" Gift to the B. & O.

W. K. Wallace (left), chief engineer of the London, Midland and Scottish Railway, presenting to Roy B. White, president of the Baltimore and Ohio, a pair of gadroon and beaded, sterling silver entree dishes weighing 114 ounces and hallmarked in 1816 by Benjamin Smith, famous English silversmith. The gift was a token of appreciation from the London, Midland and Scottish to the Baltimore and Ohio for its handling of the Coronation Scot train while in the United States. The train, recently sent back to England, was shipped to this country for the New York World's Fair in 1939 and was stranded here by the outbreak of the war. The presentation was made at a luncheon given by Mr. White at the Maryland Club in Baltimore, on September 23, in honor of Mr. Wallace and his visiting associates on the LMS.

* * *

Gas-Turbine Locomotive

(*Continued from page 555*)

loads will also result. The first cost of such locomotives, when quantity production is reached, should be considerably lower than that of the Diesel-electric locomotive. Of primary importance, however, will be the ability of the gas turbine to burn virtually any fuel which is available. For Western roads which customarily burn heavy oil, the gas turbine offers a chance of a very marked reduction in operating expenses, without sacrificing the convenience which is now expected from liquid fuels. For the Eastern and Southern roads, as well as those of Canada and many foreign countries, the gas turbine equipped with the necessary apparatus to burn solid fuel will form an economical answer to the motor power question.

The Locomotive Development Committee welcomes the suggestions of railroad men for improvements which will result in a better and more useful locomotive. Visits to the various research establishments which are conducting work for the committee are welcomed, and arrangements for such visits can readily be made by writing to the authors of this paper.

In a convention-end inspection trip a number of members visited the new modern Diesel maintenance and repair shop of the Burlington at Clyde (Chicago), Ill., where they were greeted by E. Flynn, executive vice-president, and S. L. Fee, general superintendent, Eastern district

B. & B. Officers Stage Strong Come-Back at Annual Convention in Chicago

First full-scale, post-war meeting, supplemented by an exhibit, considers wide range of subjects in addresses and reports

WITH all the vigor of its pre-war years, and a spirit that presages continued growth and increased effectiveness in its work, the American Railway Bridge and Building Association resumed its three-day annual conventions in Chicago, September 17-19, at the Hotel Stevens, with a program of addresses and reports as broad and constructive as any in its long history—ranging from consideration of the overall problems of the railways, through materials, equipment, maintenance practices, safety, sanitation, and fire prevention. In every respect the convention was in marked contrast with the restricted meetings of the past three war years, including not only the intensive program referred to, but such supplemental features as a large exhibit of equipment and materials, and a convention-end inspection trip to the new modern Diesel maintenance and repair shop of the Burlington at Clyde (Chicago), Ill.

The outstanding innovation of the meeting this year, and a major factor in its success, was the fact that it was held concurrent with the annual convention of the Roadmasters' and Maintenance of Way Association, the activities of which were reported in last week's issue. As pointed out in that report, the two associations held their regular sessions in separate rooms, but came together in a joint opening session and subsequently on several occasions to hear addresses on subjects of common interest.

Nearly 700 Registered

In this and many other respects the concurrent meetings appeared to supplement and strengthen each other, one of the most agreeable features being the opportunity afforded members and guests of each association to attend sessions of the other association of particular interest, and the opportunity afforded higher engineering and maintenance officers, many of whom were in attendance, to be present at both conventions at the same time. Outstanding too, as was pointed out in last week's issue, the concurrent meetings of the associations made possible a joint exhibit of the Bridge and Building Supply Men's Association and the Track Supply Association, which, in number of exhibitors and scope, exceeded any previous exhibit held by either of the associations.*

Availing themselves of the features afforded by the concurrent sessions and exhibit, 693 members and guests registered their attendance at the two meetings, this number having been swelled by the fact that a number of the technical committees of the American Railway Engineering Association held meetings in Chicago during the convention week in order that their members might see the exhibit and attend specific sessions of the conventions. On the other hand, the attendance was held down by the known congested hotel conditions in Chicago.

The joint opening session, as well as the other joint sessions of the concurrent conventions, was presided over by Neal D. Howard, engineering editor, *Railway Age*,† and president of the Bridge and Building Association, and Herman E. Kirby, assistant engineer, Chesapeake & Ohio, and president of the Roadmasters' Association. All separate sessions of the Bridge and Building group were presided over by Mr. Howard, assisted by Frank G. Campbell, assistant chief engineer, Elgin, Joliet & Eastern (first vice-president), and J. S. Hancock, bridge engineer, Detroit, Toledo & Ironton (second vice-president).

During the various joint sessions those present heard words of greeting

* A complete list of exhibitors, together with the names of their representatives present and their products on display, appeared in the news pages of the September 28 issue.

† An announcement of the appointment of Mr. Howard as western editor of *Railway Age*, effective October 1, appears in the news columns of this issue.

from J. B. Akers, chief engineer, Southern, and president of the A. R. E. A., and George B. Coffey, president of the Bridge and Building Supply Men's Association, as well as a challenging opening address by E. M. Hastings, chief engineer, Richmond, Fredericksburg & Potomac, and other addresses by Major-General Carl R. Gray, Jr., vice-president, Chicago & North Western; Donald D. Conn, executive vice-president, Transportation Association of America; W. K. Wallace, chief civil engineer, London, Midland & Scottish; and L. G. Bentley, general safety agent, Chesapeake & Ohio. General Gray spoke on The "Boys" of Company A; Mr. Conn on Problems Ahead in Railway Transportation; Mr. Wallace on Reconversion and Recovery Problems on the British Railways; and Mr. Bentley on How the C. & O. Won the Harriman Gold Medal Award in 1945.*

The separate sessions of the Bridge and Building group were devoted exclusively to the problems of the bridge, building and water service forces of the railways, and gave consideration to eight technical committee reports and to three addresses, the latter being by M. C. Hope, senior assistant sanitary engineer, in temporary charge of the Land and Air Carrier Section of the Sanitary Engineering Division of the United States Public Health Service, who spoke on Federal Interest and Responsibility in Railway Sanitation; J. C. Sherrick, partner, Holabird & Root, architects, Chicago, who spoke on Modern Architecture and Materials in Railway Building Construction and Maintenance; and H. I. Benjamin, vice-chairman, system committee on insurance, Southern Pacific, who spoke on Preventing Bridge, Building and Tunnel Fires.

The eight committee reports dealt with the following subjects: Adapting Turntables to Meet Modern Conditions; Methods of Cleaning Water Lines, Sewers and Drains; Developments in the Use of Off-Track Work Equipment; Methods of Improving the Strength, Durability and Wear Resistance of Concrete; Tools and Equipment for Bridge and Building Shops; Cause and Prevention of Personal Injuries to Bridge and Building Employees; Utility and Economy of Pre-Fabricated Buildings; and Servicing Facilities for Diesel Locomotives.

Some of the special events of the convention included an annual banquet on Wednesday night, jointly with the Roadmasters, which was attended by 857 persons, and the inspection trip to the new Diesel shop of the Burlington at Clyde, where a group including 50 members and guests were greeted by Edward Flynn, executive vice-president of the Burlington, and conducted through the facilities by representatives of the engineering and mechanical departments.

Still another feature of the meeting was the election of Charles H. Buford, executive vice-president, Chicago, Milwaukee, St. Paul & Pacific, as an honorary member, and the presentation of honorary membership certificates to the three honorary members elected at last year's meeting, these being Ralph Budd, president of the Burlington Lines; Charles E. Johnston, chairman, Western Association of Railway Executives; and Fred L. Thompson, chief engineer, retired, Illinois Central. This latter ceremony was presided over by Armstrong Chinn, chief executive officer of the Alton, and a past-president of the association.

Campbell Elected President

In the election of officers for the year ahead, F. G. Campbell, assistant chief engineer, Elgin, Joliet & Eastern, Joliet, Ill., was advanced from first vice-president to president; J. S. Hancock, bridge engineer, Detroit, Toledo & Ironton, Dearborn, Mich., was advanced from second vice-president to first vice-president; E. H. Barnhardt, division engineer, Baltimore & Ohio, Garrett, Ind., was advanced from third vice-president to second vice-president; W. F. Martens, general foreman bridges, buildings and water service, Atchison, Topeka & Santa Fe, San Bernardino, Cal., was advanced from fourth vice-president to third vice-president; W. A. Huckstep, general building supervisor, Missouri Pacific, St. Louis, Mo., and a director, was elected fourth vice-president, and C. R. Knowles, superintendent water service, Illinois Central, retired, and Elise LaChance, were re-elected treasurer and secretary, respectively. The new directors elected were: H. M. Harlow, assistant general supervisor of bridges and buildings, Chesapeake & Ohio, Richmond, Va.; H. B. Christianson, assistant to chief engineer, Chicago, Milwaukee, St. Paul & Pacific, Chicago; and F. R. Spofford, assistant division engineer, Boston & Maine, Dover, N. H. (re-elected).

The eight subjects selected for investigation during the year were as follows: Utilization of New Types of Materials in Buildings; Use of Laminated Members in Bridges; Unfilled Needs in Power Machines and Power Tools for Bridge and Building Work; Development and Training of Supervisory Personnel in Bridge, Building and Water Service Forces; Construction and Maintenance of Shop and Enginehouse Floors and Runways; Economies to be Derived Through the Modernization of Obsolete Water Stations; Safety Measures to Protect Employees Within Buildings Against Fire and Accident; and Need for Inspection for Substructures and Underwater Foundations.

Enthusiastic over the success of its 1946 convention, and reflecting the feeling of those in attendance, the executive committee of the association, meeting after the closing session, voted to hold its 1947 convention during the week of September 15, concurrent again with the annual meeting of the Roadmasters' Association.

Need Managements' Support

In his presidential address, President Howard called for the loyal, understanding support of all bridge and building men in the solution of the problems facing railway managements, and, in turn, the support of railway managements for the constructive efforts of the association. After reviewing briefly the problems facing the railway industry, he said in part:

"In all these things, the railroads need the wisdom and support of our association and of its individual members. To others on the railways falls the major responsibility in the solution of many of these problems, but we, individually and as an association, cannot slight our share. We must back our industry in its fight against unfair competition, and inequitable regulation of and subsidies to other forms of transportation; we must help our industry build back to new and higher standards of comfort and safety; we must help meet the challenge of rising costs with new technological developments that will prolong the life of our structures, minimize interference with traffic, and increase the efficiency and economy with which every item of our routine work is carried out; and we must accept the responsibility of strengthening supervisory personnel within at least our own department, so that when our work is done, we can lay down our tools with the confidence that our work will go on in capable hands."

After expressing a high degree of satisfaction with the achievements of the association over the years in the interest of the railways, President Howard continued, in part:

"But I am not satisfied that most railway managements, or the railways as a whole, have given our association the support to which it is entitled. The result of this situation over the years has limited severely the effectiveness of our group—the scope of its work, the breadth and soundness of its studies and recommendations, and the range of its influence for good among the thousands of bridge, building and water service supervisory officers over the country—all of which is contrary to the best interests of the railroads.

"With adequate, alert, informed and

* Abstracts of the addresses of Messrs. Hastings, Gray, Conn and Bentley appeared in the report of the Roadmasters' convention in last week's issue.

aggressive supervision one of the factors vital to the solution of many of the problems confronting the railways, our association, grown to proper proportions and influence, can be of inestimable value in creating and developing that kind of supervision in the bridge, building and water service forces. But an inarticulate attitude toward our association on the part of railway managements — even though that attitude be benevolent—will not produce the results desired."

H. I. Benjamin On Fire Prevention

Prefacing his address on Preventing Bridge, Building and Tunnel Fires with the statement that during 1945 the railroads of the United States† reported a total of 5,245 fires on their properties, representing a physical loss of more than $7 million, Herbert I. Benjamin, vice-chairman, system committee on insurance, Southern Pacific, stated that this loss does not represent the total loss because it does not include the entire cost of rebuilding the facilities, the loss of their use, the full replacement cost of machinery or stores stock, the cost of detouring trains, the added cost of making repairs under traffic, or overtime work. He placed the subject of fire prevention second in importance only to safety.

Mr. Benjamin reminded his audience that it was the supervisor's responsibility not only to recommend the specific type of fire-fighting equipment for a particular situation, but also to maintain all such equipment in good operating condition, making regular tests to determine this. Furthermore, he asked those present to bear in mind three important things for eliminating fire losses; (1) Do not permit conditions which will start or support a fire (good housekeeping); (2) put out fires in their incipiency if at all possible; and (3) obtain trained help immediately to assist in putting out fires.

He recommended that the decks of bridges and trestles be protected by a heavy coating of paint and sand or small crushed stone and a petroleum binder, as well as by the provision of water barrels and the removal of all vegetation from under the structures; that wood-lined tunnels be given concrete portals or, possibly, that they be replaced with open cuts and that timber snow sheds be equipped with sprinkler systems and with fire breaks formed by constructing sections of them of concrete, or by removing portions of the sheds in hot weather.

Because there is usually a gang of bridge and building men working in the vicinity of yards and shops, Mr. Benjamin directed attention to the need for these men knowing where fire extinguishers, hoses, fog nozzles, hydrants and similar equipment are located. He charged the occupants of railroad dwellings with the obligation of safeguarding these structures from fire, but he held bridge and building supervisory officers answerable for seeing that good housekeeping is practiced by the tenants and that heating and cooking facilities are properly installed and maintained.

Concluding his address, Mr. Benjamin stated that an important phase of fire-prevention and inspection activities is the organization of those entrusted with this work; that since fire is one of our worst foes, its prevention should go hand in hand with other safety work; and that the proper education of employees in fire prevention practices is most important.

† The railroads reporting to the Fire Protection and Insurance Division of the A. A. R.

Railway Sanitation

In his address on Federal Interest and Responsibility in Railway Sanitation, M. C. Hope, senior assistant sanitary engineer in charge of the Land and Air Carrier Section, Sanitary Engineering Division, United States Public Health Service, stated that to achieve uniformity of water quality throughout the nation, the present Public Health Service drinking water standards of 1946 have been evolved over a period of 30 years, and that these standards have been accepted generally by the various states. Being comprehensive, he pointed out, these standards cover all sanitary aspects of the water from its source to the free-flowing outlet of the ultimate consumer, necessarily including a determination of the quality of the raw water, the effectiveness of the treatment, and the elimination of sanitary hazards in the plant and distribution system, such as cross connections, blow-offs to sewers, plumbing defects, and bacteriological control.

The Interstate Quarantine Regulations of 1921, now under revision, Mr. Hope said, provide for the certification of all water supplies. To insure satisfactory watering facilities, the service has asked carriers to submit plans for the installation or reconstruction of facilities in advance of the work for joint review by the service and the respective state health departments. After completion of the installation or reconstruction of facilities, field investigations are made by the state health department personnel concerned, with the assistance of the district offices of the U. S. Public Health Service, before certification of the water supplies is given.

In addition to the watering facilities, the service also looks into the matter of sanitary facilities, such as platforms and gutters, yard drainage systems, ice-handling facilities, soil and garbage cans, incinerators, lockers, washrooms, and toilets. The question of excreta disposal from trains is also under its jurisdiction, and, Mr. Hope said, the Association of American Railroads is bearing the cost, estimated at $200,000, of studying this problem.

Committee Reports

The eight reports presented at the convention by technical committees follow in abstracted form. The complete reports, together with abstracts of the discussions subsequent to their presentation, will be published in full in the November, 1946, issue of Railway Engineering & Maintenance.

Servicing Diesel Locomotives

The report of the Committee of Servicing Facilities for Diesel Locomotives, of which committee B. R. Meyers, assistant to chief engineer, Chicago & North Western, was chairman, dealt primarily with fuel, water and sanding facilities outside of Diesel shops, and said that, because of the multiplicity of servicing points on each unit of Diesel power, special facilities are required beyond those normal to steam locomotive servicing.

The cause and prevention of railway fires were given serious consideration at the convention

In discussing fuel oil facilities, the committee, after noting the importance of having tanks of adequate size, turned its attention to tank location and design, pipe supply and hose lines, pumps, filters, and meters. At the same time, it pointed out the desirability of having sufficient oil supply outlets to service multiple-unit locomotives without respotting; of dual oil-storage tanks and pumps so they can be used individually if circumstances should require; and of either concrete hose pits or boxes, with drains, for the preservation of the hose.

Turning its attention to Diesel water, the committee stated that because water satisfactory for steam locomotive operation is usually not pure enough for use in the engine cooling systems of Diesel locomotives, nor for their train-heating steam generators, water treated in distilling or demineralizing plants should be used. Plants of these types, it said, are generally located only at points where fuel oil is taken, and have their servicing outlets so placed that water can be delivered at the same time that locomotives are fueling. The committee recommended separate storage tanks for water required for engine-cooling and train-heating purposes, so that the water for the latter can be treated with a combination phosphate-tannin, or similar treatment, before delivery to locomotives.

Although sand used for steam locomotives is satisfactory for Diesel use, the committee said that sand should be delivered by gravity feed and not blown, to avoid dust, and with the storage bin at sufficient height to permit the simultaneous delivery of sand to all four boxes on a Diesel unit. The committee expressed regret that the sandbox openings on all Diesels have not been standardized for filling from the top, an arrangement which, it said, would simplify the design of sanding stations.

Since Diesel locomotives pick up oil, dust, paper, etc., while running, creating a fire hazard not generally realized, the committee recommended that smoking and open flames be prohibited around fueling facilities, pointing out that even sparks from brake shoes are known to have started many Diesel fires.

Concrete Taken To Task

Although most engineers and construction men desire and believe that it is possible to attain well-designed, well-placed and well-cured concrete that will have a serviceable life of 50 years or more, the committee on Methods of Improving Strength, Durability and Wear Resistance of Concrete, headed by J. S. Hancock, bridge engineer, Detroit, Toledo & Ironton, stated that such concrete is not being obtained. Furthermore, the committee declared, construction and maintenance men, both in and out of the railway field, are perplexed and concerned by the rapid deterioration of concrete that is becoming more and more apparent in structures built of this material, despite the fact that in the manufacture of the concrete involved there had been strict adherence to recognized rules and specifications for both materials and work procedure.

It likened the troubles now being experienced by the users of concrete to those of the early users of steel until the time when steel was made under the direction of expert technicians, and suggested that concrete also should be made with field and laboratory control under experienced men, comparable with those of the steel industry, so that the party paying for concrete construction will be assured of receiving a product not only of a definite strength, which is now obtainable, but also one with a definite life, for which there is now no guarantee.

After discussing the inherent weakness of concrete and the possibility of so many things going wrong in its manufacture because of the human factor, the committee discussed various properties of cement, the reliability of aggregates, the importance of proper curing, the prevention of freezing and thawing and waterproofing, the possible effects of air-entraining and dispersal agents, the placing and preparation of concrete, and other considerations attendant to concrete construction. In its conclusion, the committee listed several general rules that should be followed to improve the strength, durability and wear resistance of concrete and also named several publications that merit study.

Turning Heavier Power

The Committee on Adapting Turntables to Meet Modern Conditions, of which H. M. Harlow, assistant general supervisor bridges and buildings, Chesapeake & Ohio, was chairman, declared that the handling of long Diesel power units and larger, heavier steam locomotives over turntables not designed for the loads imposed, has severely taxed the strength of these tables and increased the problem of operating and maintaining them. Faced by the fact that new, ideally-designed tables are not readily obtainable, the responsible maintenance officer, it said, can make many old facilities meet new requirements by converting balanced-type tables to three-point design, by lengthening tables too short for requirements, and by strengthening others, as well as by replacing generally obsolete features with improved parts.

The committee directed attention to the need for protecting the steel and trucks of tables from dirt and corrosion caused by drippings from locomotives and rainfall, by the construction of tight decks, and suggested several methods of obtaining them. Rail locks of a positive type, it said, are essential in the operation of tables for the correct alinement of rails of the approach tracks with those on the table. However, to counteract the improper practice of some operators to misuse the locking device for stopping the movement of the table, which results in unnecessary strain on both the rails and table, it recommended that the rail lock levers be placed outside the cab and that a smaller diameter pipe line, supported on brackets at the side of the table, be installed to operate the lock at the far end of the table. Also, to lessen the tendency of operators to "plug" or reverse the motor to stop the movement of the table, it suggested that mechanical, hydraulic, or electrical brakes be used and maintained to a high state of efficiency.

The report of the committee gave considerable attention to the types of drives for turning tables, to the maintenance of circle walls and rails, and to the conversion of tables. It also included a lengthy discussion of two- and four-wheel trucks. The importance of maintaining the approach tracks with a full ballast section and to main-line standards—a practice so widely overlooked—was emphasized, because of the effect that movement of the rail and poor lines and surface have on the proper functioning of turntables.

Cleaning Pipe Lines

Discussing the need for cleaning water mains and sewers, the report of the Committee on Methods of Cleaning Water Lines, Sewers and Drains, of which W. D. Gibson, assistant engineer, Chicago, Burlington & Quincy, was chairman, points out the economies and other benefits to be derived from such work, including, insofar as water mains are concerned, the faster delivery of water to locomotives on high-speed freight and passenger runs by the restoration of full capacity to existing pipe lines, and the reduction of the high operating costs that ensue from pumping water against high pressures created by obstructed lines.

In the case of water lines, the report mentions the primary causes of obstruction as tuberculation, and the after-precipitation of lime and other mineral salts in treated water, while in the case of sewer lines, the primary obstructions, it says, are caused by cinders, earth and miscellaneous materials, as well as by hard incrustations of minerals deposited from locomotive or power-plant blow-down systems, and by tree roots and other growth.

Classifying the general methods used for cleaning water lines as hydraulic, mechanical and chemical, the report cites a number of instances of economies brought about by pipe cleaning. At one important engine terminal, it says, where the daily water consumption about equalled delivery by continuous pumping, a 12-in. water main 4,500 ft. long was cleaned hydraulically in 1½ hr., removing tons of mud and scale, which increased delivery by 300,000 gal. daily and reduced electric consumption by 400 kw. h. per day.

In another instance, where it required 15 to 20 min. to water a locomotive at an intermediate watering point, the report states that after mechanically cleaning less than 5 min. was required to put 10,000 gal. of water into a locomotive tender.

At one engine terminal where drainage water backed up in the turntable pit after every rain, from a laterally connected shop sewer system, the line was cleaned by the

bucket method, removing many cubic yards of mud, cinders, sticks and large pieces of lime formation, at a fraction of the cost of replacing the system, which soon would have been necessary otherwise.

Prefabricated Buildings

The main advantage to the railways in the use of prefabricated buildings is that such buildings can be erected, dismantled, and relocated much more rapidly and, in many cases, at lower cost than those of conventional design, according to the report of the Committee on Utility and Economy of Prefabricated Buildings, headed by A. G. Dorland, assistant engineer, Elgin, Joliet & Eastern. Other advantages, it said, are the flexibility of these buildings to suit various railway needs, and the lower insurance rates prevailing for the more permanent concrete and steel types because of their fire-resistant construction.

The disadvantages were said to be that the building codes and ordinances of some cities and towns do not permit the erection of prefabricated buildings; that their architectural style does not harmonize with that of existing buildings in some localities; and that there is the possibility, especially in the case of two-story structures, that they might be used later for a purpose for which they were not originally intended, bringing about their failure.

Referring to precast concrete buildings, the committee mentioned the various sizes now available, the attractiveness of their design, and their durability and ability to withstand damage from fire, inclement weather and vandalism, as well as the fact that they generally require no foundations or painting. It pointed out that this type building is especially suitable for housing valuable signal apparatus, or oil, gasoline, fusees and like materials.

The committee discussed prefabricated steel buildings in some detail, including the wide range of sizes available and their design, construction and cost, and noted that buildings of this type are suitable for bunk house, kitchen, bath, and recreation purposes, as well as for tool sheds, motor car houses, garages, warehouses and storehouses. It also discussed in similar detail prefabricated frame buildings of California redwood and of plywood construction.

B. & B. Shop Equipment

Stating that the old saying, "A workman is as good as his tools," is just as true today as it was years ago, the Committee on Tools and Equipment for Bridge and Building Shops, headed by H. E. Davis, supervisor bridges and buildings, New York Central, recommended that more modern tools and machinery be furnished to the B. & B. forces. Declaring that B. & B. shops with modern machinery and tools will attract skilled personnel, it said, furthermore, that such shops can compete favorably with any production shop in outside industry, both as to quantity and quality of work.

Properly equipped bridge and building division shops, the committee stated, will handle repairs to, and the construction of, window sash and frames, doors and frames, screens, signs and crossing gates; the construction of small buildings; the cutting of the framework of larger buildings; the repairs to damaged freight shipments; stove and furnace repairs; and the manufacture of stovepipe, fittings and gutters. Such shops, it continued, can furnish much of the millwork needed by the railroad, and can make a considerable amount of its own lumber from salvaged bridge stringers, thereby providing scarce material and effecting sizable savings.

The committee advanced its views for a desirable layout for a division shop, which included areas for carpenter work, water works repairs, small engine repairs, painting, and material storage, and then gave a detailed list of recommended tools and machinery for equipping such shops. It also mentioned the desirability of having portable B. & B. shops in cars, preferably baggage cars, equipped with power units and tools—a subject that invoked much favorable comment from the floor after the presentation of the committee report.

Off-Track Equipment

Because wage raises have increased considerably the cost of labor for both workers actually engaged in productive work and non-productive employees required for work-train service, each project must be so planned and handled by supervisory officers as to make each worker, so far as possible, the operator of a machine or tool, preferably of the off-track type, according to the report on Developments in the Use of Off-Track Equipment, prepared by a committee headed by F. R. Spofford, assistant division engineer, Boston & Maine.

After declaring that the cornerstone upon which the structure of off-track construction and maintenance must be built is the highway truck, the committee discussed the mobility of truck-mounted equipment and the developments in its use during the war, pointing out that, except for deep mud and thick forests, this type equipment can go almost anywhere, hauling materials and power equipment.

Power units, including air compressors and electric generators of many types and makes, were improved and modified during the war period to fit the needs of the military services, and a trend in their development, the committee stated, is toward the small, readily-movable units, because experience has shown these units to be more economical and easier to handle than the large ones. The committee then discussed briefly the use being made of air, electric, and gasoline-powered hoists to supplant brute force in the handling of bridge and building materials.

In mentioning the uses and advantages of off-track cranes, the committee pointed out the value of the multiplicity in their employment in material-handling, pipe-laying, pile-driving, and earth-moving operations, made possible through the use of various interchangeable accessories. In conclusion it cautioned that careful thought should be given to the selection of equipment to avoid the choice of designs that limit the machines to a specific use.

Preventing Injuries

Classifying the two basic obstacles to be overcome in the elimination of personal injuries as (1) environment, unsafe tools, etc., and (2) man failures, the Committee on the Cause and Prevention of Injuries to Bridge and Building Employees, of which H. D. Curie, master carpenter, Baltimore & Ohio, was chairman, declared that, when all railroad employees reduce man failures to the extent that managements have reduced hazards, safety will have become a reality. After stating that bridge and building employees as a class must be particularly vigilant in detecting hazards because of the constant variation in the types and locations of their work, which may entail the repairing of an enginehouse roof today, the repair of a trestle over a small ravine tomorrow, and then perhaps the repair of

(*Continued on page 568*)

Bridge and Building Association

Officers 1945-46

N. D. Howard, president, editor, Railway Engineering and Maintenance, Chicago.
F. G. Campbell, first vice-president, asst. ch. engr., E. J. & E., Joliet, Ill.
J. S. Hancock, second vice-president, br. engr., D. T. & I., Dearborn, Mich.
E. H. Barnhart, third vice-president, div. engr., B. & O., Garrett, Ind.
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Elise La Chance, secretary, Chicago.
C. R. Knowles, treasurer, supt. w. s., I. C. (retired), Chicago.

Directors

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F. R. Spofford, asst. div. engr., B. & M., Dover, N. H.
Guy E. Martin, supt. w. s., I. C., Chicago.
B. R. Meyers, office engr., C. & N. W., Chicago.
L. E. Peyser, prin. asst. arch., S. P., San Francisco, Cal.

Treasury Officers Resume Meetings

First convention in five years attracted record attendance of more than 300 members and guests to Edgewater Park, Miss.

RESUMING its annual meetings after their suspension for five years of the war period, the Treasury Division of the Association of American Railroads drew a record attendance of more than 300 members and guests for last week's sessions at the Edgewater Gulf Hotel, Edgewater Park, Miss. The meeting, extending from September 25 through September 27, was featured by committee reports covering the five-year period since the last previous gathering at Colorado Springs, Colo., in September, 1941, and by the addresses of Wayne A. Johnston, president of the Illinois Central, J. Elmer Monroe, assistant director of the Bureau of Railway Economics, A. A. R., and H. W. Siddall, chairman of the Trans-Continental and Western Passenger associations.

Although designated as the Division's sixth annual convention, the meeting was the thirty-fifth gathering of railway treasury and finance officers, including meetings held under the auspices of the Division's predecessor — the Railway Treasury Officers' Association. As usual, there were executives of many banking and financial institutions among the guests. Transportation arrangements included a special I. C. train from Chicago which carried more than 175 members and guests to the meeting.

Hurst Is New Chairman

At the closing session, Harry Hurst, assistant treasurer of the Pennsylvania, was elected by acclamation to serve for the ensuing year as chairman of the Division and of the Advisory Committee. He succeeds A. E. Tate, treasurer of the Southern, who presided at the meeting. E. R. Ford continues as secretary with headquarters as heretofore at Washington, D. C. By informal poll, the members indicated their preference for Atlantic City, N. J., as a 1947 meeting place, this being subject to ratification by the Advisory Committee.

Under an amendment to the rules of order adopted at the meeting, members of the Advisory Committee, which supervises the Division's affairs in collaboration with A. A. R. Vice-President E. H. Bunnell, were designated by the Division's several sectional groups which are comprised of treasury officers from different parts of the country. This amendment formalizes with a Division rule, thus making effective on a permanent basis, the emergency procedure under which the Advisory Committee was manned during the interim since the previous meeting in 1941. The previous rule provided for the election of Advisory Committee members from the floor at annual meetings.

Other rules amendments contemplated by the convention's action related to the qualifications for honorary membership,, and the discontinuance of the practice of appointing nominating committees to submit the names of candidates for elective offices. A committee was designated to redraft the rules of order in accordance with the meeting's expressions.

Public Relations Opportunity

Meanwhile, I. C. President Johnston had delivered his address at the convention's opening session where he was introduced by I. C. Vice-President R. E. Connolly. The I. C. president, as he put it, regards treasury officers as "truly key men of the railroads," who are equipped to function in a broad public and employee relations role as interpreters of the economics of railroading.

"In the conduct of your work," he said, "it is vitally necessary for you to have an understanding and appreciation of the workings of every business with which we have financial dealings. And the reverse of that is also true—it lies within your power, and you have a great opportunity, to aid all the people with whom we have dealings to know and understand and appreciate our business. There needs to be—and I think it is a desperate need—more and better understanding throughout the business community of the so-called 'facts of life' about the railroads. I urge you to give very serious thought to the opportunity that is yours to contribute to a better public comprehension of railroad economics.

"The second subject which I commend to your serious consideration is related to the first. That is the matter of your relations with all other departments. One might be called public relations and the other personnel relations. Perhaps it would be clearer to call one external relations and the other internal relations. The cash drawer is the nerve center of the railroad, and you are the custodians of the cash drawer. In that role you have a great opportunity to contribute to internal as well as external harmony in the conduct of our affairs; you also have a fine opportunity to contribute to internal as well as external education in the economics of our business. Such economic education is desperately needed on the inside as well as (even more than) on the outside.

"All of us who work for the railroads must have a sound working knowledge of the economics of our business if we are going to keep our industry and our individual units of it in trim for the times. I look to you and your associates for genuine leadership in this field. I challenge you to make it your business to interpret to all railroaders the economics of the business in which they are engaged."

Coming to a consideration of the railroad outlook, Mr. Johnston expressed his own optimistic views and called upon the treasury officers to join him in a resolution to do all within their power to see that there is no return of the "philosophy of despair" which "engulfed" the industry in the pre-war period. Mr. Johnston does not believe this pessimism originated on the railroads; but "so many well-meaning but short-sighted people said over and over again that the railroads were a decadent industry—that they had passed their heyday and were on the way out—that even a lot of smart railroad people came to be inoculated with this defeatist philosophy."

"That way of thinking," the I. C. president continued, "has been pretty well wiped out by all the things that have happened since Hitler invaded Poland seven years ago. . . . We are all engaged in a business which, as I see it, has a bright future with promise. It is a challenging future that calls for the best in every one of us. . . . In the first speech that I made after assuming the presidency of the Illinois Central I undertook to express my concept of the outlook for the railroads. . . . I repeat it here and call upon you to make it the inspiration of all our thoughts and plans for the future. This is it: We must have railroads in and for America—solvent railroads, strong railroads, manned by alert and respected workmen, directed by progressive management, modernized to fit the needs of American enterprise, operating under sound policies of government, and commanding the confidence of the American people."

The second day's session was devoted entirely to consideration of reports of

standing committees and sectional groups, Chairman Tate getting those proceedings under way with brief remarks on the work of the Advisory Committee. During the five-year period since the previous meeting, this committee held eight meetings, including a pre-convention session at Edgewater Park.

Division Wins New Prestige

"The members," Mr. Ttate went on, "have contributed much time and effort to the consideration of the many varied subjects which have been brought to the attention of the committee for study and recommendation. The committee has wholeheartedly cooperated with Vice-President Bunnell in supervising and administering the affairs of the division during the trying war times, and in the post-war period in which we have been confronted with so many and perplexing problems. Like my predecessors in the office of chairman, I firmly believe that the prestige of the railway treasury officers organization has been materially enhanced through the cooperative efforts of the treasury officers in dealing with important subjects of national interest requiring expedited and coordinated action on behalf of our industry."

Following "streamlined" procedures agreed upon prior to the meeting, Secretary Ford summarized the detailed report of the Advisory Committee. Where reference was made to a subject which had been considered also by a standing committee, the chairman of the latter was called upon to highlight his committee's report. This routine gave members a coordinated and up-to-date report on findings of all committees which had any aspect of subject under consideration. The Advisory Committee's report showed that the present membership of the Division includes 273 treasury and finance officers representing 166 member roads of the A. A. R. There are also 26 associate memberships, held by carriers which are not A. A. R. member roads.

Among the more important matters before the meeting was the proposed Manual of Treasury Procedure, prepared by E. W. Hotchkiss, consultant for the Division, and distributed to all members prior to the meeting. During the discussion of the manual, attention was directed to the fact that rules and regulations affecting railway treasury procedure are contained in federal and state statutes, regulations of the I. C. C., tariffs of the carriers, circulars issued by individual treasury departments and by the Division itself, and instructions issued by other railroad departments. And it was also noted that apparently no coordination exists and no index is available to agents and other interested officers in need of a guide to direct a search for desired information or advice.

Manual About Ready

The manual was drafted after a review of a cross-section of instructions issued by 22 roads, it being emphasized that it is not intended to be binding on any carrier. Its purpose is only advisory. After revisions in accord with suggestions submitted by interested railroad officers, the manual will be published by the A. A. R. early next year.

Another matter which evoked considerable discussion was the proposed revision and republication of the Division's Circular TD-71—the list of banks through which drafts for settlement of inter-road accounts may be drawn. Ralph W. Scheffer, manager of the Check Department, Federal Reserve Bank of New York, who collaborated with the Division's Committee on Banks in progressing this subject, reviewed events leading up to the recommendation that A. A. R. member roads be circularized to ascertain whether their treasurers have (or will) arrange for the handling of inter-line account drafts as cash items.

Mr. Scheffer stated that the larger banking institutions are very much interested in the circular and in handling railroad drafts as cash items wherever possible. He suggested, however, that the circular, when reissued should list the routing symbols of only those banks with which arrangements for such handling have been made. He explained that this would eliminate much confusion, since the use of routing symbols implies that the item involved is to be handled as a cash item.

Would Make Drafts Cash Items

The Federal Reserve official further suggested that reissuance be delayed until returns are received from the circular being sent to member roads, as noted above. Later on, the convention approved the inauguration of a campaign to have all treasurers arrange for the handling of inter-line account drafts as cash items with the understanding that the proceeds from such drafts would be remitted to the drawe without deduction of any collection charges. In this connection, it was recalled that the whole matter arose as a result of the Federal Reserve Board's Regulation "Q," which makes member banks subject to a fine if they absorb more than $2 of such charges for a single depositor in any one month.

The Advisory Committee's report also reviewed the past five years' developments with respect to joint-credit arrangements, revealing that such arrangements have now been established at 933 common points throughout the country. Under them, the participating carriers collaborate in the enforcement of I. C. C. credit regulations relating to allowable time for payment of freight charges. The subject is being actively progressed within the Division's sectional groups for the purpose of ascertaining whether post-war conditions call for extension of the plan to points where it was not justified on the basis of traffic volume in the pre-war period.

The convention reaffirmed the Division's previous stand in favor of petitioning the I. C. C. "at the opportune time" for a reopening of commission proceedings relating to the extension of credit by the different types of carriers. The objective of the plea would be to have the commission eliminate disparities between the rules promulgated for railroads in Ex Parte 73 and the Ex Parte MC-1 regulations applying to motor carriers.

Other Credit Matters

Other credit matters which came before the meeting for discussion included a proposal to allow an additional day of credit to industries which have established a five-day week; extension of credit on shipments delivered to Army, Navy, and Marine Corps post exchanges; inter-line settlement of revenues from traffic transported over joint routes with motor or water carriers; collection of charges due from foreign governments and purchasing commissions; rules governing the uniform collection of passenger and related tariff charges; extension of credit by express companies; and carrier practices with respect to the extension of credit to freight forwarders.

With respect to Consolidated Classification Rule 7, the convention was brought up-to-date on the various amendments and other developments since the 1941 meeting. This is the rule which governs the delivery of order and advise shipments prior to the surrender of the order bill of lading, written order, or other required document. Numerous proposals had been considered by the Advisory Committee and rejected, all of them having for their purpose the elimination of Rule 7's present requirement that the shipper must present a specific corporate surety bond in order to be relieved of his obligation under a blanket bond where the bill of lading or other document is unavoidably delayed or lost. It was the consensus that there should be no relaxation of the present rule on the matter.

At the same time, it was suggested that National Diversion and Reconsignment Rules 8 and 16 be amended to include reference to security as defined in Classification Rule 7. A "standard" form of letter of indemnity for use in connection with the delivery of import shipments under the provisions of Rule 7 was approved as recommended practice of the Division. Also, the forms of shippers' order bonds, previously adopted as recommended uniform practice, were revised to make their provisions conform precisely to the amended requirements of Rule 7.

As the latter was being done, the single-shipment indemnity bond was simplified so that all writing could be shown on the first sheet, the terms and conditions of the bond being set forth on the back. The principle of joint bonds at common points was approved, as was a rule to the effect that the maximum value of freight shipments released under protection of a blanket bond shall not exceed 80 per cent of the amount of the bond except in an emergency situation.

Unanimously approved by the convention was an Advisory Committee recommendation to the effect that a study be conducted of the forms of vouchers, checks, drafts, etc., used by individual roads. It was pointed out in this connection that some carriers are still effecting settlements through documents requiring both receipt and endorsement, whereas the recommended form requires but a single endorsement. It was understood that as a result of the convention's action, arrangements would be made for the appointment by the A. A. R. Accounting Division of a subcommittee of its Disbursements Committee to collaborate with the Treasury Division's Committee on Banks and officials of the American Bankers Association and the Federal Reserve System in further progressing the matter with a report setting forth recommended uniform and simplified forms of vouchers, drafts, checks, and other negotiable paper.

Plans for Selling Tickets

Among other subjects considered in the Advisory Committee's report were various pending proposals to provide more convenient arrangements for the purchase of railroad passenger transportation; and it was to a discussion of this matter that Chairman Siddall of the Trans-Continental and Western Passenger associations devoted his address. He stated that as a result of joint conferences between treasury and traffic officers it had been decided to issue a questionnaire for the purpose of ascertaining the views of present and potential rail patrons as to their preferences with respect to three proposed plans as follows:

Plan A, providing for a card somewhat similar to the air lines' credit card, with a plate attached from which an imprint could be obtained at the ticket office on a check or draft which would clear through the banks in the usual manner, the principal difference as compared with the air lines' plan being that the railroads would receive their money practically immediately on sale of tickets whereas the air lines render bills monthly or at other agreed periods.

Plan B, which provides for so-called railroad warrants in the form of travelers' checks which would be issued and cleared through the banks in the same manner as travelers checks.

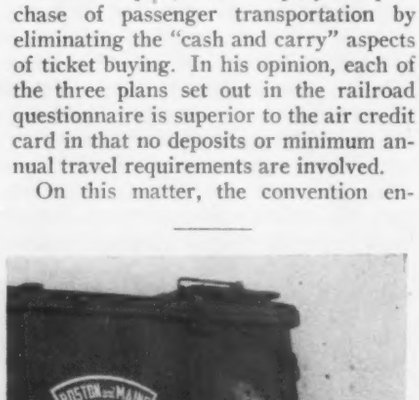
Plan C, the so-called Swanson Plan, which provides for an outside organization to solicit the firms and industries and for drafts on a central bank approved by the railroads and by industry.

Mr. Siddall said that 16,208 questionnaires were sent out September 9, and 2,407 replies (a 14.86 per cent return) had been received up to the time he spoke. The returns showed that 1,711 favored Plan A; 135 favored Plan B; 36 favored Plan C; and 228 were not interested in any plan. The air credit card plan is now used by 1,184 of the respondents, the returns further indicated. Moreover, they also showed that 330 would prefer to have the railroads adopt the air credit card plan.

As Mr. Siddall explained, the purpose of all three plans is to simplify the purchase of passenger transportation by eliminating the "cash and carry" aspects of ticket buying. In his opinion, each of the three plans set out in the railroad questionnaire is superior to the air credit card in that no deposits or minimum annual travel requirements are involved.

On this matter, the convention endorsed the Advisory Committee's recommendation that any proposal to institute a travel credit card plan on the air line pattern be disapproved; and that the traffic officers be informed that other plans studied by the treasury officers, including the three set out in the railroad questionnaire, were surrounded with sufficient safeguards. It was also the consensus of the meeting that if proposals to sell passenger transportation on the installment plan are adopted, the necessary arrangements should be made available through an outside corporation rather than by having the railroads individually or collectively deal with the banks.

Remaining business of the meeting included informal remarks by A. A. R. Vice-President Bunnell and reports of the Division's several standing committees, which will be reproduced in the forthcoming Sixth Annual Report of the Division. The address on "Traffic and Earnings Prospects," delivered by Assistant Director Monroe of the Bureau of Railway Economics was reported in the *Railway Age* of September 28, page 509.



B. & M. cars get "Minute Man" insignia

The Boston & Maine is placing its official insignia on all its freight cars in place of the former plain lettering of the road name. Here a painter at the Concord, N. H., shops is putting finishing touches to stenciling on the side of a box car.

B. & B. Officers Annual Meeting

(*Continued from page 565*)

a bridge at dizzy heights over a rushing torrent next week, the committee listed the more frequent causes of injuries that occur to men in the bridge and building department.

Commenting on the fact that injuries sustained from falls are usually of the more serious type and, proportionately, are greater in number than any other class of accidents, the committee listed the causes of falls as (1) overloading, defective materials, and faulty design; (2) lack of railings or toe boards, or both; (3) falling objects, such as refuse, materials and tools; (4) failures of floor boards; (5) failure of tackle; (6) wind and fire; and (7) carelessness. It then urged extreme care and precaution when handling pile drivers, cranes and explosives, and then turned its attention to the erection and proper use of scaffolds, both the fixed and swing-types, and the use of barricades, where necessary, to safeguard the public.

Continuing its report, the committee dealt with the precautions that should be observed in cutting and welding operations in the repair of tanks and containers that hold or have held inflammable materials, and in the use of air and electric tools. It also stressed the importance of having well-trained machine operators.

Following a discussion of the causes of motor-car accidents and of the correct operation of motor cars, the committee spoke highly of the value of safety meetings, which produce frank discusions and analyze all accidents, and then, after commenting favorably on the safety "rule-a-day" practice adopted by many railroads, it concluded with 12 suggestions for the advancement of safety education.

GENERAL NEWS

4th Quarter Loadings Seen up 9.8 Per Cent

Shippers boards predict rise above the corresponding period of last year

Freight car loadings in the fourth quarter of 1946 are expected to be 9.8 per cent above those in the same period in 1945, according to estimates compiled by the 13 Shippers Advisory Boards.

On the basis of those estimates, loadings of the 30 principal commodities will be 7,599,575 cars in the fourth quarter of 1946, compared with 6,924,123 actual car loadings for the same commodities in the corresponding period in the preceding year. All of the 13 boards estimate an increase in loadings for the fourth quarter of 1946 compared with the same period in 1945 except the Northwest region.

The accompanying tabulation below shows actual loadings for each district in the fourth quarter of 1945, the estimated loadings for the fourth quarter of 1946, and the percentage of increase or decrease.

The 13 boards expect an increase in the fourth quarter of 1946 compared with the same period one year ago, in the loading of 25 of the commodities listed, and a decrease in five. Among those showing the greatest increases are the following: Automobiles and trucks, 138.5 per cent; agricultural implements and vehicles other than automobiles, 45.1 per cent; cement, 42.6 per cent; canned goods, 16.5 per cent; gravel, sand and stone, 15.8 per cent; coal and coke, 15.1 per cent; lime and plaster, 14.6 per cent; brick and clay products, 12.7 per cent; lumber and forest products, 12.4 per cent; fresh fruits, other than citrus fruits, 12.3 per cent; machinery and boilers, 11.2 per cent; potatoes, 10.7 per cent; paper, paperboard and prepared roofing, 9.9 per cent; cotton, 6.8 per cent; fresh vegetables, 6.6 per cent; and grain, 6.3 per cent.

Commodities for which decreases are estimated and the amount of the decrease follow: Hay, straw and alfalfa, 16.5 per cent; livestock, 15.5 per cent; ore and concentrates, 8 per cent; flour, meal and other mill products, 1.7 per cent, and sugar, syrup and molasses, seven-tenths of one per cent.

Shippers' Advisory Boards	Actual Loadings Fourth Quarter of 1945	Estimated Loadings Fourth Quarter of 1946	Per Cent Increase
Great Lakes	373,308	425,145	13.9
Ohio Valley	864,730	1,047,886	21.2
Mid-West	904,866	974,139	7.7
Northwest	540,566	504,505	6.7dec
Trans-Mo-Kan.	401,059	428,037	6.7
Southeast	762,789	813,149	6.6
Southwest	483,011	484,963	0.4
New England	116,761	122,195	4.7
Atlantic States	677,236	765,704	13.1
Allegheny	955,227	1,080,460	13.1
Central Western	329,976	346,410	5.0
Pacific Coast	315,020	353,107	12.1
Pacific N. W.	199,574	253,875	27.2
Total	6,924,123	7,599,575	9.8

Strike Called on C. A. & E.

A walkout on October 1 of 168 motormen, conductors, collectors and switchmen on the Chicago, Aurora & Elgin, following a strike order by two railroad brotherhoods when the road stated it was unable to grant wage increases amounting to 18½ cents per hour, halted the company's 263 daily trains and left 25,000 passengers—including 8,000 Chicago commuters—without regular train service. The two unions, the Brotherhood of Locomotive Firemen and Enginemen and the Brotherhood of Railway Trainmen, called the strike after the road maintained that it could raise wages no more than 14½ cents per hour. In speaking for the C. A. & E., Arthur L. Schwartz, president, said: "We already have offered them all our income for the year and asked them to give us a chance to live."

Kansas City Southern Enters Air Freight Business

The Kansas City Southern Skyways, Inc., has been organized by the Kansas City Southern, with headquarters at Kansas City, Mo. The new company will be headed by J. E. Kimmel, vice-president; E. C. Oliver, chief pilot and operations manager, and J. M. Kershaw, superintendent of maintenance. The president of the company has not been appointed.

The K. C. S. Skyways stated that it will operate airplanes to any airport in the United States, with charges based on point-to-point, straight-line mileage, rather than on circuitous airline routes. Pickup and delivery service from the airports will be furnished, if the shipper desires, the company said.

Present equipment includes 3 twin-engine, Douglas C-47 planes, with payload capacities of 7,000 lb. each, and 3 single-engine, Norseman planes, with 1,800 lb. payload capacity each. The company is contemplating the purchase of additional equipment.

Calls for a Sound Financial Roadbed

Metzman tells traffic clubs stable economy depends on transportation

In an address October 1 at the twenty-third annual meeting in Columbus, Ohio, of the Associated Traffic Clubs of America, Gustav Metzman, president of the New York Central, discussed the relationship of transportation to this country's world leadership, emphasizing the interdependence of industry and transportation and the serious consequences to the whole economy that can scarcely be avoided unless there is soon developed some form of financial security for transportation. Excerpts from this address follow:

To find a workable financial footing for America's transportation calls for thorough public understanding and economic statesmanship of the highest order. For it is one of the basic economic problems of the world leadership in which this nation finds itself today. We Americans did not seek that position of world leadership. But we have it. It is a position of vast opportunities. But it is equally one of tremendous responsibilities. We dare not make economic mistakes. For if we do, we shall not suffer the consequences alone. We shall spread suffering and misery throughout the world. . . .

This gigantic task of world reconstruction and reconversion offers unparalleled opportunity to every part of this country's industrial, agricultural and transportation sysetm. . . . But now let us look upon the other face of these same opportunities, and see the tremendous responsibilities involved. For every stoppage, every shortage that develops in any part of our great industrial machine now not only causes local or even national hardship, but spreads suffering abroad as well.

During the past three months, there has been such a shortage—a nationwide shortage of freight cars. . . . Now, quite aside from the immediate and aggravating causes of today's car shortage, its basic, underlying cause is traceable directly back to the war. War, with its record freight movements, wore out cars at a record rate. At the same time, war-born shortages of critical materials prevented adequate building of new freight cars for replacement. Thus a car shortage became inevitable.

Cause and Effect—Let me make myself clear. I am not looking backward for an excuse. I am certainly not questioning the prior need for tanks and guns and shells and fighting ships in wartime. I am simply illustrating the truth that when

cars wear out and are not replaced fast enough, a car shortage follows which works hardship on all American industry and on those abroad who look to America for urgently needed goods. And I cite this illustration because war is by no means the only thing that can bring about such a dangerous discrepancy between freight car mortality and new car construction. Exactly the same result must follow if the railroads for an considerable period are prevented from earning enough to purchase new equipment. Exactly the same result will follow if the railroads of America are compelled to go on operating at high, post-war labor, material and supply costs, while depending for their revenue on rates that are little above pre-war levels.

Right now, we on America's railroads are—if you will—gambling. For we *are* re-equipping—we *are* modernizing—we *are* improving our rights of way. In short, we *are* preparing to provide the finer, faster, more efficient transportation that your expanding industries must have if America is to prosper at home and meet its world responsibilities. And we are counting upon the enlightened self interest of you in industry, and upon the fundamental fairness of the American people, to make it possible for us to continue this program of progress for the good of all. . . .

But the question I must raise is this: Can the New York Central, and the railroads of America long continue such progressiveness if their earning power is progressively squeezed between post-war operating costs and pre-war rates? The answer is—*they can't!* No industry on earth can long provide an ever improving service if it is compelled to operate in the red.

Realism in Rates Required—The prime and pressing need of the railroads now is to bring their freight rates up into line with their post-war labor and operating costs. For only in that way can they hope to remain in business as private industries. And only in that way can they hope to provide the increased and improved service which you will need as your output rises to satisfy America's growing markets at home and abroad. Today, all industry is on the eve of a great peacetime expansion. Certainly, this is no time to let the railroads be crippled, by wholely inadequate freight rates. . . .

Increased expenses and decreased revenues seriously threaten the ability of the railroads to continue providing adequate and efficient transportation, to maintain their properties satisfactorily, and to make necessary improvements. In order to meet the critical situation resulting from the combination of increased wages and increased prices for materials and supplies together with the severe decline in traffic and earnings, it is imperative that the railroads' petition for a general increase in freight rates be granted promptly. We cannot provide adequate and efficient transportation at pre-war rates. The prices we receive must be promptly adjusted to those we pay. . . .

Traffic Will Bear It—There is no reason why traffic expected to move in the years following 1946 cannot support the world's finest transportation if freight rates and charges are in proper relation to the wages the railroads pay, the cost of materials and supplies which they must buy, and the general price structure prevailing in the national economy. In the final analysis, adequate revenues for the railroads are bound to benefit not merely the railroads but all industry and the nation at large. The railroads are the nation's arteries carrying the life blood of industry. If those arteries are strong and healthy, then all industry is in better position to prosper. But if those arteries are weak and improperly nourished with inadequate revenues, they then deterioriate and the nation together with all industry suffers. A freight rate increase, therefore, is equally important to the country and all other industry as it is to the railroads. . . .

The history of labor over the years has been one of consistent increase in power. With this power must go a commensurate sense of responsibility. Power, wisely gained and wisely managed, can contribute immeasurably to the good of all. Power without responsibility, however, inevitably becomes destructive and in due course can result only in undermining the effective functioning of our economic system. In the interests of the country, no less than labor itself, responsible power, wisely administered, will advocate wages, and productivity in return therefor, which will permit industry to function without interruption at maximum production and maximum employment. The productivity of labor must go hand in hand with the wages of labor.

Sound Economic Roadbed—In the days ahead, you in industry will need, and *expect*, post-war transportation. Perhaps you think of it primarily in terms of swift streamlined passenger trains and new, highspeed merchandise trains. But, being a railroad man, I think of post-war transportation first of all in terms of a roadbed. For fast, efficient modern trains can only run over a solid, well-graded roadbed with strong rails to withstand today's mighty loads and speeds.

Similarly, real post-war transportation can only be operated on a sound financial roadbed. It must be built upon the rock ballast of freight rates that are consistent with costs. It must be freed from the unreasonable grades imposed by present, uneconomic Government transportation policies. It must be smoothed by the creation of working rules, not aimed at inflated hourly pay, but at efficiency—efficiency which alone assures steady employment, high wages and lasting security.

I realize that such problems of peace are, generally, far more difficult to solve than those of war. But I also feel strongly that there is nothing wrong with us, now, that hard work and mutual fairness will not cure. These problems *must* be solved, and solved on a high level of economic statesmanship. For only in such a way can we hope to maintain an efficient, expanding production and transportation system that will enable America to reap the opportunities and meet the responsibilities of world leadership.

I. C. Investigates Air Service

To explore thoroughly the question whether or not the Illinois Central should provide air transportation for freight shipments, the road has employed the Charles A. Rheinstrom Aviation Consultants, headed by Charles A. Rheinstrom, former vice-president in charge of traffic and director of American Airlines. This organization will make a complete study of the transportation of cargo by air in the road's territory, from the point of view of possible offerings of that service by the railroad.

Burlington Completes Extensive C. T. C.

On September 27, the Burlington placed centralized traffic control in service on 137 miles of single track between McCook, Neb., and Akron, Colo., thus completing this form of train operation by signal indication on 483 consecutive miles of single track between Lincoln, Neb., and Denver, Colo., which is said to be the longest continuous territory controlled by C. T. C. Between Lincoln and Chicago the Burlington has two or more tracks except for 26.2 miles of single track between Red Oak, Iowa and Balfour and 5.4 miles between Greenwood, Neb., and Waverly, which also are equipped with C. T. C. Thus, the Burlington now has either two or more tracks, or else single track with C. T. C., on the entire 1,034 miles between Chicago and Denver.

Although not the first railroad to install C. T. C., the Burlington claims to have made the first installation on a complete engine district, the project on 112 miles of single track between Akron, Colo., and Denver having been completed in 1937.

In August, the Burlington completed the installation of C. T. C. on 58 miles of single track between Flag Center, Ill., and Savannah which, added to the 48.5 miles previously in service on its Twin Cities line, makes a total 107 miles so equipped. The remainder of the 427 miles on this route between Chicago and St. Paul, Minn., has two or more main tracks.

Experimental P. F. E. Reefer Ready for Tests

An experimental lightweight refrigerator car which has been under construction for almost a year in Los Angeles, Cal., has just been completed by the Pacific Fruit Express Company and will soon go into actual service, undergoing extensive car tests and research during the next two years.

Exterior sheathing of the many-purpose, standard-dimension car is Reynolds aluminum alloy. Use of this metal alloy throughout the superstructure is said to result in a saving of almost four tons compared with conventional refrigerator cars, while steel has been retained for the load-bearing underparts. The car will roll on new easy-riding trucks.

Virtually all improvements suggested by the National Fruit and Vegetable Trade Committee are embodied in this experimental car, according to P. F. E. It also has such existing features of the newest P. F. E. cars as half-stage icing devices, herringbone floor racks for better bearing surface under all types of loads, and convertible ice bunkers which can be folded when not needed, thereby increasing the

capacity of the car when used as a box car for a wide variety of freight. As in other of the newest P. F. E. cars, the walls, floor and roof of this experimental car have an extra thickness of insulating material, a new light-weight glass insulation being used in this instance. It also has side wall flues and circulating fans to force the cooling or warming air around the load.

Freight Car Loadings

Loadings of revenue freight for the week ended September 28 totaled 916,483 cars, the Association of American Railroads announced on October 3. This was an increase of 17,430 cars, or 1.9 per cent, above the preceding week, an increase of 83,974 cars, or 10.1 per cent, above the corresponding week last year, and an increase of 3,856 cars, or 0.4 per cent, above the comparable 1944 week.

Loading of revenue freight for the week ended September 21 totaled 899,053 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, September 21

District	1946	1945	1944
Eastern	172,099	150,139	164,992
Allegheny	189,712	178,093	195,163
Pocahontas	64,410	53,470	53,636
Southern	128,961	112,852	123,340
Northwestern	142,589	140,363	141,485
Central Western	138,922	139,951	143,171
Southwestern	62,400	62,425	76,096
Total Western Districts	343,911	342,739	360,752
Total All Roads	899,053	837,293	897,885
Commodities:			
Grain and grain products	48,174	55,624	49,832
Livestock	19,129	21,728	21,829
Coal	189,123	172,367	174,847
Coke	14,422	12,227	13,720
Forest products	49,478	40,832	44,024
Ore	67,530	72,354	75,567
Merchandise l.c.l.	122,280	107,859	107,714
Miscellaneous	388,917	354,382	410,350
September 21	899,053	857,293	897,883
September 14	907,169	856,101	891,486
September 7	794,483	729,854	825,166
August 31	908,440	860,342	897,603
August 24	884,957	853,426	904,871
Cumulative total, 38 weeks	29,502,114	31,181,590	31,833,438

In Canada.—Car loadings for the week ended September 21 totaled 80,658 cars as compared with 73,489 cars for the corresponding week last year, according to the compilation by the Dominion Bureau of Statistics.

Totals for Canada:	Revenue Cars Loaded	Total Cars Rec'd from Connections
September 21, 1946	80,658	35,471
September 22, 1945	73,489	32,491
Cumulative Totals for Canada:		
September 21, 1946	2,593,254	1,291,485
September 22, 1945	2,616,402	1,358,451

Union Pacific Passenger Train Derailed; Six Dead

Six people were killed and more than 50 injured when the Union Pacific's fast westbound Chicago-Los Angeles train, the "Transcontinental," was derailed on a curve three miles east of Victorville, Cal., on September 26. Of the dead, five were passengers, while the other was a coach porter.

According to a spokesman for the railroad, the accident occurred on a 6-degree curve to the right on which the superelevation was 3¼ in., and on which there was a speed restriction of 40 m. p. h. The track at this point is owned and maintained by the Atchison, Topeka & Santa Fe, but is used by both lines. The locomotive, baggage car and three day coaches were all overturned in the derailment, while the two dining cars were derailed, but remained upright. The Pullman cars, which were on the rear of the train, remained on the track. All of the fatalities and serious injuries occurred in the coaches.

The cause of the derailment, which took place at 7 a. m., was not immediately established.

Allegheny Shippers Board Meets

The fifty-fifth meeting of the Allegheny Regional Advisory Board was held in the Hotel Pick-Ohio, Youngstown, Ohio, September 19, with General Chairman F. M. Russell, traffic manager of the General Fireproofing Company, Youngstown, presiding. An increase of 13.2 per cent was forecast in regional carloadings for the fourth quarter of this year, as compared with the same 1945 period, one of the major factors in the expected increase being the larger movement of coal and coke that is expected in view of curtailed shipments last year when many mines were closed for as much as 17 days.

The luncheon session was addressed by William White, president of the Delaware, Lackawanna & Western, whose remarks were partially reported in *Railway Age* of September 28, page 522. The national transportation situation and the freight car supply picture were reviewed by W. E. Callahan, manager, open top car section, Car Service Division, Association of American Railroads. The need for cooperation between shippers and carriers to meet the situation caused by the car shortage was stressed by J. B. Keeler, assistant general traffic manager of the Koppers Company and chairman of the board's emergency transportation committee.

Mr. Keeler, speaking for the legislative

* * *

A Job for Management

The United States is the last great stronghold of the profit and loss system of capitalistic free enterprise. It is the last great nation of a republican or constitutional form of democracy. The years of the present century have witnessed its great industrial development unparalleled in the annals of history. The lot of the average man under this form of government has been better than at any time under any other form. Under the system of free enterprise the production of goods and their availability and enjoyment by the masses reached its zenith prior to World War II. It was the conversion of the instruments of peace-time production to the purposes of war, through the team work and ability of a free and resourceful people, that tipped the scales in favor of the allies against the earlier preparedness of dictators, and at least temporarily has afforded the opportunity for a continuance of the American way of life and the betterment of all people.

It is easy for men to believe those who make promises for betterment of conditions; it is difficult to refute promises by facts. Men are prone to form their beliefs and base their actions on emotions rather than reason, hence it requires education and constant repetitive effort to offset the glowing promises of the demagog which are impossible of fulfillment and destructive in effect. It is only natural for men to want to improve their lot and to wish for what they want. The trouble arises in teaching them what is possible of accomplishment and the best way to attain it. Industry has not effectively approached the task with respect to its own employes or the public. Free Enterprise is now reaping the whirlwind, approaching its own extinction.

It should be recognized by management that there are three principal parties involved in the operation of Free Enterprise: investors, employees and the public. To attract capital to originate and conduct successful enterprise, the investor must reasonably feel he will receive a fair return on the money he risks in the venture. The employee has a right to hope for fair wages and working conditions, and he should expect to loyally and ably assist in making the business a success. He should be shown that under Free Enterprise labor has prospered and will continue to prosper to a greater degree than under any system of controlled economy. The third party is the public consumer, who for his purchases is entitled to as good a product as the circumstances will permit.

As between management and employees, where the number is small, nothing is equal to personal contact and the creation of goodwill and confidence. Where the industry is too great for personal contact between top management and employes, recourse must be had to a careful selection and education of supervisory foremen, aided by the printed word such as house organs or magazines. But, whether by oral or printed word, the presentation must be complete, sincere and constantly repeated. It has the elements of any other advertising or selling job. With investors, where numerous and scattered, the same process must ensue.

The successful sale of the Free Enterprise principle must be widely undertaken. A few cannot do the job. As a railroad man I have striven to follow the plan outlined above but without similar efforts by others I cannot hope that a great deal has been accomplished. It is a job for all industry to do thoroughly in each community. In this way the whole will be leavened.

—James B. Hill, president of the Louisville & Nashville, in an article prepared for the Fusion Point, published by the Southern Coal Company.

committee, recommended that the board adopt a resolution urging renewal for one year of the so-called Certificate No. 44, whereby the director of war mobilization and reconversion has previously exempted the rate bureau method of making freight rates from anti-trust law action. The board acted favorably on this proposal, and recommended that other advisory boards take similar action.

On the suggestion of the car efficiency committee, presented by J. N. Lind, traffic manager of Spang Chalfant, Inc., Ambridge, Pa., the board also adopted a resolution urging the A. A. R. to appeal to the office of Defense Transportation to secure some restriction in connection with the use of steel and other materials supplied to car builders so that preference in the use of scarce materials will be given to the manufacture of cars for American railroads over production for export.

Pennsylvania Gives Facts In Delay of Improved Service

Improved daylight passenger service between Chicago and cities approximately 300 miles east and south thereof, which is in the top-drawer of the Pennsylvania's post-war plans, is being postponed and obstructed by inadequate net earnings and slow deliveries of the new equipment necessary to protect the runs in question, according to James M. Symes, vice-president, western region. Explaining that daily, short-line daylight passenger train service at higher-than-present speeds between Chicago and Cincinnati, Ohio, Columbus and Dayton, Louisville, Ky., and Indianapolis, Ind., is an important immediate aim of the road, Mr. Symes stated:

"For many months it has been the plan and hope of the Pennsylvania management that faster daily daylight passenger train service between Chicago and cities approximately 300 miles distant, with improved equipment, could be inaugurated this year, but with the year nearing its end and no adequate financial relief in sight, coupled with inability to secure delivery of new equipment, the outlook for immediate improvement is discouraging."

He added that the subject has been very much alive in the road's post-war plans, which were being formulated long before the war's end, and that the Pennsylvania's equipment program calls for the expenditure of nearly $50,000,000 for new locomotives, passenger cars and freight cars.

"Strikes, shortages of materials and delays of various kinds have slowed delivery of urgently needed locomotives and cars," Mr. Symes stated. "Serious as these shortages and delays are, they are not nearly as critical as the shortage of money with which to further replace, improve and

The Pennsylvania Posts Employees on the Crosser Law

In a September 24 letter to all employees of the Pennsylvania, President Clement has outlined the significance to them of the Crosser law, particularly as it increases the taxes they pay and threatens the jobs they hold.

Excerpts from his letter follow:

"There are two things of prime importance to the railroad employees—first his job, and next his pension. The best social insurance in the world is a steady job during our working years, and an assured pension after retirement. Both of these are put in peril by unsound legislation such as the Crosser bill.

"It is amazing that the same Congress which voted to keep the social security tax on employees in other industries at 1 per cent has practically doubled the tax on railroad workers, who were already paying much more than other workers. Because of the Crosser bill, you will soon be paying more than six times as much tax as employees of other industries, but your maximum pension will be less than twice theirs.

"Take the 'old timer'— the railroad man who has 30 years' or more service —and he is numerous among us. Say that he is earning $300 per month or more. His retirement tax is now $10.50 per month (3½ per cent of $300.) But starting next January 1st, his tax will be $17.25 per month (5¾ per cent), and by 1952 it will be $18.75 per month (6¼ per cent). And for this tremendous increase in taxes he will not receive one cent more pension.

"The amendments provide survivor benefits for widows and others under certain circumstances. But what this amounts to is compulsory life insurance —you must pay for it whether you want it or not, and you can't even name the beneficiary of your policy, because the law does that for you. The amendments also increase the minimum annuity slightly (this affects chiefly those with comparatively short service) and provide disability annuities after 10 or 20 years' service under certain circumstances.

"Now, perhaps these are all desirable things, but they will have to be paid for; and it should not be forgotten that the pension fund now is not financially sound and that even the greatly increased taxes will not put it on a sound basis.

"The railroads do not oppose a workable and sound social insurance system for their employees. You know that your railroad has always favored pensions and has accepted the cost of the pension on a 50-50 basis with the employees.

"Health and accident insurance has always heretofore been the individual"s responsibility, but, in keeping with the trend of the times, it may be desirable to put it on a 50-50 basis, the same as the pension. However, it should not be paid for out of funds collected to provide unemployment insurance. A separate fund should be established, and of course the fund should be kept financially sound.

"Furthermore, benefits provided by such legislation should go to bona fide railroad employees. As it is, the law is so drawn that a person who worked for a railroad as little as a month may get accident or sickness benefits from it as long as 2½ years after he has quit the railroad.

"Benefits are provided for numerous forms of sickness or accident having no connection with railroad work—for example, in the case of female employees, for unemployment on account of pregnancy and childbirth.

"Unemployment insurance is a good thing, but there should be a separate fund for this purpose, and the railroads should not be required to pay into it more taxes than are actually necessary to provide unemployment insurance. Under nearly all the unemployment compensation laws for workers outside the railroads, the taxes are adjusted according to actual needs, and the present average tax is about 1.8 per cent. In contrast, the railroads have been required to pay a tax of 3 per cent.

"In the end this hurts the railroad employee, because every added expense of operation handicaps the railroads in their competition with other forms of transportation. The railroads either must attempt to meet that competition by cutting expenses—which necessarily means cutting payroll expenses by reduction of forces—or lose business to their competitors. In either case, the employees suffer through loss of jobs.

"Congress has now adjourned, but there will be another Congress after a few months, and there will be other opportunities to review and reconsider the provisions of the Crosser bill. In the meantime, it behooves all railroad workers to calmly consider the facts.

"We are all concerned to keep the railroads running on a sound basis, so that you may have your jobs now, and to keep the pension fund solvent, so that you may have a pension available when you retire. We are confident that, in the end, intelligent thought will produce action to the benefit of all concerned."

This letter also was sent to Pennsylvania stockholders, to whom Mr. Clement added further comments on the Crosser bill, including the following:

"The tax burden on your railroad will be increased $9,900,000 annually, equivalent to 1½ per cent on the stock, by the requirements of the Crosser bill.

"This measure increases the social security payroll taxes imposed upon the railroads from a present level of 3½ per cent to 5¾ per cent, starting next January, and ultimately rising to 6¼ per cent in 1952. The same Congress which, in its closing session, added so heavily to the social security burdens of the railroads, voted to leave unchanged, at 1 per cent, the social security payroll taxes paid by all other industries."

maintain railroad equipment and properties. The Pennsylvania's near $50,000,000 order for new equipment has been made in the face of an estimated $14½ million loss in net income our railroad will undoubtedly suffer for the year 1946. Never before in the Pennsylvania's 100-year history has it operated at a deficit for a full year.

"This critical financial situation is typical of all the railroads of our country, and is the most serious in American transportation history. However, the railways still have been unsuccessful in obtaining anything like an adequate increase in freight rates. This situation is now retarding improvements to such an extent that further orders for new equipment will of necessity have to be curtailed."

Grondahl Explains the "Azon"

A paper was presented by Dr. L. O. Grondahl, director of research and engineering of the Union Switch & Signal Company, at a meeting of the Railway Club of Pittsburgh, Pa., on September 26, in which he told the story of the research, development, manufacture, and combat use of the "Azon," or controllable bomb, in World War II. His talk was illustrated by lantern slides and motion pictures.

The Azon, a high-angle bomb controllable in right and left deflection from the plane from which it is released, was developed under the direction of the National Defense Research Committee of the Office of Scientific Research and Development, with the immediate personal supervision of Dr. Grondahl. Approximately 25 organizations, including university research laboratories, industrial laboratories, and manufacturing plants, were involved in the development and the production of this unit. The Union Switch & Signal Company was assigned the task of engineering the experimental units for production and combat use, and of manufacturing in accordance with their designs, made in close cooperation with the development forces and with the Army Air Forces and Ordnance Department.

Electro-Motive Expands Its Engine Repair Facilities

To bring repair facilities closer to the operating field of its customer's locomotives, thus reducing loss of time and shipping costs incurred in transporting parts and assemblies to the main plant, the Electro-Motive division of the General Motors Corporation is constructing two new locomotive repair shops, to be located at Jacksonville, Fla., and Baltimore, Md. Two repair shops are already established—one at Emeryville, Cal., and another at the main plant at La Grange, Ill. This chain of shops, the division states, will afford railroads the use of original factory machinery and methods, and economies of quality production.

"We have learned through our experience at Emeryville," said W. D. Davis, parts manager of Electro-Motive division, "that there is a strong demand from many railroad users of General Motors locomotives for factory repair of certain parts and assemblies, especially those in which the economies and quality of factory production methods afford natural advantages over individual railroad set-ups to do the some work. This includes such work as rebuilding traction motors and generators, the repair of injectors, governors, pumps and like mechanical and electrical assemblies.

"But the time loss and shipping costs incident to transport of parts and assemblies back to the main plant has to some extent offset the advantages. As part of our continuing program to contribute to successful operation of General Motors locomotives, we now are establishing the repair facilities so close to the operating field of the squipment that the time lag and shipping costs no longer will be deterrents."

In further moves to bring control of service and parts closer to its customers, Electro-Motive has established a new regional field service organization, with headquarters at St. Louis, and also increased its district representation. The Fort Worth (Tex.) district representation has been restored, and to serve Mexican railroads, a new district has been created, with the center of operations at San Luis Potosi, Mex. The Denver service headquarters has been transferred to the jurisdiction of the St. Louis region.

A. A. R. Signal Section Plans Annual Meeting

The contribution of signaling to the safety and operation of rail transportation in the future will be the major topic for discussion at the forty-eighth annual three-day meeting of the Signal Section of the Association of American Railroads at the New Ocean House in Swampscott, Mass., beginning on Monday, October 14. Railroad signal officers from all parts of the United States and Canada will attend.

Highlights of the session will be addresses by Governor Maurice J. Tobin of Massachusetts; Commissioner William J. Patterson of the Interstate Commerce Commission; Brigadier General Paul F. Yount, assistant chief of transportation of the United States Army; Edward S. French, president of the Boston & Maine; and Clark Hungerford, vice-president in charge of the Operations and Maintenance Department of the A. A. R. Other speakers will include G. W. Baughman, chief engineer of the Union Switch & Signal Company, and O. S. Field, director of engineering and research of the General Railway Signal Company.

Committees of the organization will report on the results of important research in the field of railroad signaling during the past year. E. W. Reich, chairman of the Signal Section and superintendent of telepgraph and signals of the Reading, will preside.

Shippers to Hear Pelley at October 21-22 Meeting

John J. Pelley, president of the Association of American Railroads, will be the principal speaker at the annual meeting of the National Association of Shippers' Advisory Boards at the Jefferson Hotel in St. Louis, Mo., on October 22. Other features of the meeting will include a report on the Perfect Shipping Month campaign by J. E. Bryan, general chairman of the National Management Committee; reports by the regional boards on the results obtained by their car efficiency committees, and a report on the national transportation situation by W. C. Kendall, chairman, Car Service division, A. A. R.

What Two Shippers Are Doing About the Car Shortage

As an example of what an industry can do to see that freight cars are used as intensively as possible during the present shortage, attention has been called to the plan adopted by the Dewey Portland Cement Company of Kansas City, Mo. This organization has assigned two of its traveling representatives to the job of getting shipments to its customers unloaded promptly, and to make their work effective it supplies them daily with lists of cars shipped to their territories, with sufficient details for close contact to be kept with every car.

The field men have authority to keep in touch with consignees to ask them to unload cars promptly, and customers are asked to notify the company, at its expense, as soon as the cars are empty. In addition, a notice is mailed the customer the day after a car is shipped, suggesting that he can help meet the tight car situation by unloading immediately, by notifying the railroad as soon as the car is empty, and by ordering loads at maximum capacity of cars.

Another organization which has cooperated in obtaining the maximum service from freight cars is the Quaker Oats Company, which has plants in many cities. Measures it has put into effect in this connection are a development of war-time experience, and are based upon the following program:

"The existing equipment situation has been described by the railways and the Office of Defense Transportation as probably the most critical in the history of transportation and our own observation and experience supports that opinion. Despite our efforts in the past it is in our own and the public interest to examine immediately prevailing mill practices for the purpose of ascertaining whether and to what extent it is possible for us to do more than has been done in the past.

"We should disregard free time allowances as a part of our operating policies and keep before us that every day that can be saved in the loading and unloading of cars is a definite contribution to our own interests and the public welfare. Additionally, any improvement in time saved in the loading and unloading of cars will have its effect upon our demurrage assessments, which, while not extreme, could be reduced if our loading and unloading time could be diminished.

"Mill forces have been organized to give some of their time to loading and unloading at week-ends. We will continue and expand this arrangement to provide for loading and unloading Monday through Saturday and Sunday to meet emergencies.

"Industrial production leveled off to a five day week has been held responsible in some quarters for reducing the efficiency of freight cars. Our view is that this con-

dition has been exaggerated. In any event, it has not been true of us. We have consistently held to the policy at substantial expense of making ample provisions for loading and unloading beyond the hours included in the five day week. The preparation of cars before loading, which is a proper railway obligation, has also been undertaken by us at substantial expenditure of time and money."

I. C. Christens Aluminum Refrigerator Car

Aluminum refrigerator car No. 51,000, built to customer specifications at the Illinois Central car shops, McComb, Miss., was christened on September 25 by Miss Alice Casey, high-school daughter of T. J. Casey, superintendent at McComb, in ceremonies attended by shipping and transportation representatives from many parts of the country.

The new car is the Illinois Central's answer to the request of the Refrigerator Car Committee of the United Fresh Fruit & Vegetable Association for a light-weight, all-purpose, low-temperature, easy-riding, ice-cooled car. The committee, headed by J. N. Kelley, manager of fruit transportation, Fruit Dispatch Company, is comprised of officers of shipping associations and consignees from California to Maine, Florida to Washington.

The car makes extensive use of aluminum alloy, Gustin-Bacon fiber-gass insulation and Preco forced-air circulation. The aluminum alloy, manufactured by the Aluminum Company of America, was fabricated into necessary car parts by fourteen railway supply companies and assembled at McComb shops, effecting a saving in weight of 14,000 lbs., or nearly 25 per cent of the standard car. Thirty-seven other equipment companies furnished the remainder of the 3,385 parts going into the construction of the car. Other features include electric lights, pre-cooler, Duryea cushion underframe and A. S. F. ride-control trucks.

Collapsible bulkheads make it possible to ice the car, fully or partly, to heat, or to convert it into a box car. When fully iced, it is designed to move long distances while maintaining low temperatures.

C. & E. I. Inaugurates New Streamliner October 6

The "Meadowlark," a new four-car Diesel-powered streamline train, will be placed in service on October 6 between Chicago and Cypress, Ill., by the Chicago & Eastern Illinois.

The new train will provide fast daily service between Chicago and southern Illinois points, and make it possible for residents of the latter to journey to Chicago in the morning, have plenty of time for business transactions or shopping and return to their homes in the evening.

The four cars of the train, which were delivered to the road by the Pullman-Standard Car Manufacturing Company on September 28, comprise one combination mail, baggage and grill-room car and three coaches. The grill section is arranged to serve 20 persons at a time, while each of the coaches will carry 60 passengers in reclining seats amidst accommodations featuring individual seat-lighting, wide-paned windows and mirrored or muraled partitions.

The 2,000-hp. Diesel-electric passenger locomotive which will regularly haul the train was built by the Electro-Motive Division of General Motors Corporation and has been in regular passenger service on the C. & E. I. for several months.

The cars and locomotive of the new train were exhibited at 13 cities and towns in southern Illinois from October 2 to October 5, inclusive. Following the close of the exhibition at West Frankfort at 9:30 p.m., October 5, the train was scheduled to operate as an extra to Cypress to start the initial trip of its 345-mile run to Chicago on October 6.

The "Meadowlark," scheduled as trains No. 25 and No. 26, will leave Cypress daily at 5:15 a.m. and arrive in Chicago at 12:25 p.m.. Southbound, the train will leave Chicago at 5:10 p.m. and arrive in Cypress at 12:20 a.m. The new train is scheduled to make 19 intermediate stops between Chicago and Cypress in each direction, including two flag station calls.

In connection with the new "Meadowlark," train No. 21, the "Zipper," will leave Chicago 30 min. earlier than at present and arrive at St. Louis, Mo., 15 min. earlier.

A second new streamliner, a seven-car train for service between Chicago and Evansville, Ind., is to be delivered in the near future, the C. & E. I. announces.

Canadian Pacific Wants Revenues Raised if Wages Are

The Canadian Pacific, opposing the application of some of the unions for a wage rise of 10 cents an hour before the Canadian War Labor Board at Ottawa, urged that the increase applied for "should be deferred until some effective steps are taken by all competent authorities to assure the company the revenues it so urgently requires."

The employees' application was for a "directive" requiring wage agreements similar to those concluded with the Canadian National, which became effective as from June 1. The Canadian Pacific, while recognizing the desirability of parity of wages for its employees in relation to the employees of the Canadian National, said it was compelled to oppose the increase as beyond its ability to pay unless it obtained an increase in the prices which it was allowed to charge for its services.

While regretting that its financial position and its outlook for the future compelled opposition to the application, the company in its brief declared "the difference between the situation of the Canadian National and that of the Canadian Pacific with regard to providing for their respective financial needs is too well understood to require any elaboration."

Factors mentioned as contributing to its present financial position were the progressive increases in wages and cost of materials combined with the sharp decline in revenues and rigidly controlled freight rates. Wage and material increases would increase Canadian Pacific operating costs by $50,100,000 in 1946 more than would have been the case had the 1939 level of wages and prices prevailed, it was stated.

The picture for 1947 was even more gloomy. "Under such conditions," the brief said, "the company would have no option but to make drastic reduction in the number of its employees."

It was pointed out that the Board of Transport Commissioners repeatedly has laid down the principle that a railroad is entitled to rates that will pay operating expenses and fixed charges, yield a reasonable return to its owners and provide, in part, for necessary improvements and betterments. In order to pay the increased wages, and at the same time, give effect to the foregoing principles, the Canadian Pacific said it would require an increase in its charges sufficient to provide additional revenues of upwards of $40,000,000 a year.

Club Meetings

On October 11, V. A. Hewitt, treasurer, Chicago, Indianapolis & Louisville, will read a paper before the Chicago chapter of the Railway & Locomotive Historical Society, on the subject Hoosier Heritage—the Monon. The meeting will be held in Room 1200, 205 West Wacker Drive, at 7:30 p. m.

A meeting of the Eastern Car Foremen's Association will be held October 11 at 8 p.m. at the Engineering Societies Building, New York. A paper entitled "Development and Trends of Railroad Air Conditioning" will be presented by G. T. Wilson, assistant engineer of rolling stock, New York Central.

A meeting of the Western Railway Club is scheduled for October 21, 6 p.m., at the Hotel Sherman, Chicago. Edward J. Kelly, mayor of Chicago, will be the speaker.

The Car Department Association of St. Louis will meet at the Hotel DeSoto, St. Louis, Mo., on October 15 at 8 p. m. Congressman Melvin Price, of Illinois, will discuss National Defense—Past and Future.

A meeting of the Northwest Locomotive Association has been scheduled for October 21, 8 p. m., at Woodruff Hall, St. Paul, Minn. A paper on wrought steel wheels will be presented by the Edgewater Steel Co.

The Railway Club of Pittsburgh will hold its annual meeting, with election of officers, at the Fort Pitt hotel, Pittsburgh, Pa., on October 24 at 8 p. m.

I. C. C.'s Lee Will Speak at A. T. A. Convention

Interstate Commerce Commissioner William E. Lee will be the principal spaker at the thirteenth annual convention of American Trucking Associations, Inc., to be held at the Hotel Sherman, Chicago, from October 5 to 9. He will deliver his address at the October 8 session.

An A. T. A. announcement of last week pointed out that the meeting will be the "first full-scale convention since pre-war days," and "nearly 2,000, and probably more will be on hand," A. T. A. President Ted V. Rodgers will preside.

The General News department is continued on page 587.

With the Government Agencies

Freight Car Output Increased in August

Production of passenger units also up slightly, Small's report discloses

Freight car production during August increased 40 per cent over July, Civilian Production Administrator John D. Small commented in his latest "Monthly Report on Civilian Production." As reported in *Railway Age* of September 14, page 453, 5,141 cars for domestic use were manufactured in August. The total output, 5,532 cars, compares with a total of 3,961 in July, when 3,433 cars were built for domestic use. The production of cars for export declined from 528 in July to 391 in August.

"Increased availability of materials was largely responsible for the steep rise in August production, which showed the first signs of recovery from the impact of material shortages," the report said. "The rate of production is still far below capacity and considerably short of demand. The industry is hopeful of attaining a rate of at least 8,000 domestic cars per month during the last quarter of 1946, and C. P. A. is attempting to make sure that materials are available to meet this goal."

More Domestic Orders—The report added that the backlog of orders continued to rise from 96,000 cars on August 1 to 100,000 on September 1. The entire increase came from the domestic roads, whose unfilled orders increased to 57,000, while foreign orders remained at 43,000.

The C. P. A. said that producers in many industries are "believed to be limiting" their output on the basis of transportation available. It noted that the maritime strike is believed to have tied up between 2,500 and 5,000 freight cars which would normally be used otherwise and that the harvest season is adding its burden to the already overtaxed carriers.

"As it stands today, with the continued high level of freight carloadings, the bad order car situation has not improved to any appreciable extent," the report continued. "While some small improvements have been effected, the number of unserviceable cars continues at nearly twice the normal level. Despite the increase in the production of new cars, output is still far below the capacity of car builders' plants to produce. Shortages of materials, particularly steel and steel products, constitute the underlying causes of the critical shortages of freight cars."

The report further noted that the C. P. A. is taking action to "channel the necessary materials" to car builders and railroads in an effort to bring relief at the earliest possible date. It said that the steel industry has agreed to cooperate with car builders and railroads in order to prevent steel from being a bottleneck to returning bad order cars to service and completing more cars on order. The report commented that railroads and car builders have been instructed by the Office of Defense Transportation to identify their orders for steel products for repair of bad order cars and for new domestic cars by car lot numbers, railroad, type and number of cars involved and steel tonnage required.

The C. P. A. also has requested industry to unload freight cars as quickly as possible—even at the expense of overtime wages—in order to decrease turn-around time and get cars back into service as quickly as possible. "These actions, coupled with an increased flow of materials," the report observed, "should result in appreciable relief in this acute situation in the last quarter of 1946."

Passenger Cars Lagging—Due to the shortage of component parts and specialties, passenger car production increased only slightly from 61 cars in July to 68 in August. The C. P. A. said that storage spaces are full of partially completed cars awaiting installation of special lighting equipment and hardware. It added that the backlog of passenger car orders from domestic roads also increased from 2,540 on August 1 to 2,689 on September 1 and that heavy cancellations of foreign orders reduced the overseas backlog from 473 cars to 99. The net result showed a decline in unfilled passenger car orders from 3,013 on August 1 to 2,788 on September 1.

The report also pointed out that brake shoe production in August increased 26 per cent over the July output and reached 90 per cent of capacity. According to the C. P. A., the brake shoe industry expects to hit its maximum rate in the fourth quarter, although there still will not be enough of this commodity to replace used shoes as often as pre-war practice required. It said that the borrowing of brake shoes from cars laid up for other repairs and use of the shoes to the condemnation limit rather than to the wear limit will continue.

Southern Pacific Fined $5,000 by Nevada Court

Entering a plea of nolo contendere to three counts of an information consisting of 10 counts, the Southern Pacific was fined $5,000 for violating the Elkins Act and Part I of the Interstate Commerce Act, it has been announced by the Interstate Commerce Commission. The remaining seven counts were nolle prossed. The fine was imposed by the federal district court at Reno, Nev.

Highway Users Map Program for Future

"Congress" adopts resolutions on "barriers" sizes and weights, and taxation

Resolutions adopted by the first "National Highway Transportation Congress," which met at Washington, D. C., last week under the auspices of the National Highway Users Conference, included pronouncements on "highway barriers to interstate commerce," taxation, and state regulations of motor vehicle sizes and weights. The resolutions, which were set forth in committee reports adopted by the congress, have the effect of recommendations for guidance in the formulation of its future policies.

The committee on removal of highway barriers to interstate commerce came up with the general recommendation that "the states should eliminate highway barriers by entering into reciprocal agreements concerning motor vehicle use taxes and regulation." To this end it urged the conference and the state conference groups to "continue with even greater intensity their efforts to bring about uniform motor vehicle laws and regulations."

Many "Resolves"—This same committee also "resolved" that the government "should encourage sound development of highway transportation to promote social and economic progress," and that regulation of all types of motor vehicle operation "should be in the public interest and not for the benefit of any competing form of transportation." At the same time, as the committee put it, regulation "should be held to a minimum necessary to assure public safety," and state regulation "should be confined to the regulation of intrastate commerce only, except such statutory laws as are a clear exercise of police powers."

The committee on size and weight restrictions asserted that laws pertaining to those matters should be "determined by the public interest," but found that there is at present "inadequate information relative to the economics of sizes and weights and other factors to make an exact determination of such public interest." Thus it was the committee's first recommendation that highway user groups gather such information, but, meantime, the congress "recognizes (1) the desirability of liberalizing many existing limitations now in effect in a large number of states; and (2) the need for a united front on the part of public officials and the highway user groups to accomplish such liberalization."

Recommendation 2 of this committee's report commended the American Associa-

(*Continued on page 579*)

Steelman's Report Notes Rail Burdens

Freight car shortage stressed by O.W.M.R. head in message to Truman, Congress

Burdens more complex and difficult to handle than the tremendous loads which were carried during the war years are confronting the nation's transportation systems, particularly the railroads, in moving this country's "unsurpassed peacetime output" to market, it was asserted this week by John R. Steelman, director of the Office of War Mobilization and Reconversion, in his latest quarterly report to President Truman and Congress.

"The transportation problem will become increasingly acute during the next few months,'" Mr. Steelman warned. "The crux of the problem is a serious shortage of serviceable freight cars. It takes more cars per ton-mile to move civilian goods than it did to move war orders. The civilian hauls are usually shorter; cars are tied up more frequently for loading and unloading. Consequently, while railroad ton-miles have decreased steadily from the 1944 war peak, car loadings have been increasing to the highest levels since October, 1941."

Freight Backlog Seen—Pointing out that Colonel J. Monroe Johnson, director of the Office of Defense Transportation, has reported that the demand for freight cars this fall will approximate 1,000,000 cars weekly, Mr. Steelman said that unless the existing supply of serviceable cars is enlarged quickly, the railroads will not be able to load more than about 925,000 revenue cars a week. He added that the resulting cumulative backlog of "dammed up freight" could not be entirely disposed of for a considerable time.

"War-time shortages prevented the railroads from getting all the cars they needed to retire obsolete and worn-out equipment," Mr. Steelman continued. "About one-third of the 1,667,776 freight cars owned by railroads on American lines on August 15 are more than 26 years old, far beyond their normal retirement age. These rail-weary veterans are subject to frequent breakdowns. Almost 79,000 cars were out of service awaiting repairs on August 15. Since 1940 the railroads have placed 262,199 new freight cars in service, 19,129 of them in the first 6 months of 1946. Yet the number of serviceable cars on line has declined, as a result of break-downs and retirements, from 1,649,027 on August 15, 1944, to 1,598,923 on August 15, 1946. The railroads have more than 56,608 additional new cars on order."

According to Mr. Steelman, reconversion bottlenecks attributable to the freight car shortage already have begun to appear. He reported that several lumber mills in the Pacific northwest were forced to shut down because they could not move the boards already sawed. In addition, he said that delays in shipments of raw materials and components have slowed down some production lines, while crop losses threatened on the west coast when canneries could not get cans delivered. He further noted that large quantities of wheat are stacked on the ground in the West and said that only through emergency actions have relief shipments been maintained.

Call for Industry's Aid—Mr. Steelman also reviewed the steps taken by various government agencies, including the O. D. T., the Civilian Production Administration and the Department of Agriculture, in order to break freight "bottlenecks." He said that the turn-around time of freight cars has been shortened by more than a day in the past two months, a saving equivalent to 114,000 cars, and pointed out that both the O. D. T. and the C. P. A. have urged industry further to reduce turn-around time by reinstating week-end unloading of cars until the emergency is passed.

"The State Department is seeking prompter placement of foreign orders for freight cars to be built after domestic orders are filled," Mr. Steelman remarked. "A larger backlog of orders should encourage car manufacturers to speed up production of domestic orders."

Declaring that "further coordinated action will have to be taken when necessary to avert a transportation crisis that could have grave consequences for our domestic reconversion program and for our plans to help restore economic and political stabilization abroad," Mr. Steelman observed that the maritime strike placed an "even heavier burden" on the "already overburdened transportation system." He said that delays in coastwise shipments of coal to New England must be made up by more intensive use of the railroads and at the same time pointed out that approximately 7,000 additional freight cars had to be assigned to movement of general export cargo after the strike ended to refill export "pipe lines."

Lake Movement Off—With respect to Great Lakes shipping, Mr. Steelman reported that the movement of iron ore, coal and grain on the Great Lakes during the first five months of the 1946 shipping season was "much below" that of the corresponding 1945 period. He said that labor-management disputes in the iron ore and coal mines and on the railroads, together with the depletion of the wheat carry-over, combined to reduce shipments. He also noted that the O. D. T. has taken action to secure maximum utilization of the lake fleet during the remaining months of open water and that the Maritime Commission, at the request of the O. D. T., has made seven additional government-owned ships available for operation on the Great Lakes.

Following a brief summary of the shipping outlook, particularly with respect to coal, iron ore and grain movements on the Great Lakes, the O. W. M. R. director noted that the shortage of freight cars also has placed an additional burden upon the "already overtaxed" motor carriers. He said that freight tonnage moved over the nation's highways in July was "slightly above" that moved in the same month last year, adding that the truck lines, like the railroads, need new equipment urgently.

Turning to air transportation, Mr. Steelman reported that movement of freight

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Argument Concluded in Rate Advance Case

Fort asserts that proposed boost would have little effect on prices

Oral argument on the railroads' Ex Parte 162 petition for a general 25 per cent increase in freight rates was concluded before the Interstate Commerce Commission at Washington, D. C., on September 28, the carriers' closing plea being the rebuttal statement by J. Carter Fort, vice-president and general counsel of the Association of American Railroads.

Mr. Fort told the commission that the increase in rates being sought by the carriers would amount to "only about one per cent" of the wholesale value and "still a smaller proportion'" of retail values at the designation points of commodities transported by rail. "Even if the railroads are granted the full increase they request, they would earn in 1947, on the basis of anticipated revenues and costs, only about half what is needed to keep the industry in health and strength adequate to meet the daily needs of commerce and the emergency demands of national defense," he declared. At the same time, he warned that if the proposed increases are denied the railroads at the present time when business is "brisk" and traffic "heavy," far larger increases in rates than would otherwise be necessary will have to be made in the future "at a time when the economy of the country is less able to stand such increases."

Why Lay Off Men?—Replying to those who have urged the commission to delay action on the railroads' application until it is known what next year's traffic will be—particularly Acting Secretary of Commerce Alfred Schindler, as reported in *Railway Age*, September 28, page 530—Mr. Fort said that "if the freight traffic in 1947 should prove to be far above the expectations of those best informed on the subject, the railroads would still need the full amount of the rate increases which are sought in these proceedings." He told the commission that Mr. Schindler's statement of September 23 "will not add to your already thorough knowledge in the field of transportation."

Mr. Fort also took sharp issue with those who have suggested that the existing railroad crisis should be met by the "ruthless cutting" of working forces and the deferment of necessary maintenance of railroad plants and equipment.

"Surely those who advocate such a course do not conceive that it would be good business to have railroad men walking streets in idleness when there is work for them to do and work which needs to be done, just because the level of rates on the railroads is held down to a point where there is no money with which to pay them," he commented.

Stressing that the issue before the commission is the "gravest in its history," Mr. Fort explained that "the issue is whether government regulation of transportation can and will be administered as a practi-

cal matter so as to carry out effectively the will and purpose of Congress, as expressed in its declaration of policy in 1940, that sound economic conditions in transportation should be forstered and that a transportation system should be developed and preserved which is adequate to meet the needs of commerce and the demands of national defense."

What Is Government Policy?—"Are railroads to be prevented by government action from earning adequate returns now, at a time when traffic is heavy, prices are high and economic conditions are such as to permit ample earnings?" he asked. "Certainly no reasonable system of government regulation could produce such a result. The reason for the present meager returns of the railroads is not low traffic volume, for traffic volume is higher than ever before in peacetime. The reason is that railroad rates still are virtually on pre-war levels, while wages and the price of fuel and supplies—the major elements in railroad operating costs—have gone up more than 50 per cent. To meet this increase in costs and partially restore the balance between railroad income and outgo, the railroads are asking increases in rates averaging 19 per cent on all freight traffic."

In conclusion, Mr. Fort asked the commission, in its consideration of the railroads' proposal, to bear in mind an excerpt from its 1930 report to Congress, to wit: "The country still needs its railways and can support them."

Viewpoints of various state railway and public service commissions, coupled with the opinions of numerous shippers, highlighted the argument prior to Mr. Fort's appearance. One of the most vigorous protests against the proposed increase was made by Parker McCollester, who appeared in behalf of the Kaiser-Frazier Corporation, the Chrysler Corporation, the Packard Motor Car Company and several additional motor car manufacturers, with the exception of the Ford Motor Car Company and the General Motors Corporation.

Warning that "no automobiles will move by rail from Detroit" if the 25 per cent increase is approved, Mr. McCollester said that he knew of "No more glaring inequalities in freight rates" than those upon new vehicles shipped from Detroit. "The companies I represent do not challenge the need of the railroads for a rate increase, but we do oppose the rates on finished automobiles shipped from the Detroit area as compared with those from General Motors and Ford assembly points throughout the United States," he declared.

Mr. McCollester asserted that while Ford and General Motors, on a haul equal in distance to that from Detroit to New York, pay 45 per cent of the first-class freight rate, the other manufacturers are charged 85 per cent of the same rate. He said that a 25 per cent increase would add 11 cents per 100 lbs. to the Ford-G. M. C. tariff and 23 cents per 100 lbs. to the rates paid by the other automobile shippers.

"Even such a big company as Chrysler must find a way to overcome the rate differential," he continued. "Chrysler will not ship by rail if the present rates are increased. In the end, the consumer will have to absorb whatever freight increase is granted, because the increase will be added to the retail price of every automobile."

Shippers Offer Suggestions—A. L. Reed, representing Dallas, Tex., cotton interests, concluded that the commission should first explore all sources of railroad revenue before it considers an increase in freight rates. He said that a hike in freight rates on cotton would force cotton merchants to resort to moving their product via motor carriers. At the same time, Mr. Reed pointed out that the railroads are asking for a much larger increase in rates on short-haul cotton traffic—on which, he observed, there is keen motor competition —than on long-haul cotton traffic. Also appearing in behalf of Southwestern sand and gravel producers, Mr. Reed described the railroads' proposed increases on gravel and sand as "staggering."

M. W. Wells, representing Florida fruit and vegetable growers, declared that the railroads have no right to increase the "traffic distance" between Florida and the rest of the nation, as he said the proposed rates would do, while F. C. Hillyer, appearing for the Southern Traffic League, the Florida Rate Conference, and Florida phosphatic sand and clay interests, in addition to several other industries, argued against a flat rate increase and what he termed "disproportionate increases."

Karl D. Loos, representing California fruit and nut growers, supported the railroads' proposal for rate increases subject to a maximum of 15 cents per 100 lb., regardless of the length of the haul, but protested the proposed boost in refrigeration charges. J. A. Montgomery, arguing in behalf of other California agricultural shippers, said that the railroads had not submitted sufficient evidence in support of their proposal to increase "protective charges," adding that "the burden to establish higher costs of icing cars is upon the railroads."

Freeman Bradford, attorney for the Indianapolis, Ind., Board of Trade and other organizations, and I. M. Herndon, representing the Board of Trade of Chicago, Ill., both protested to increased rates on grain. Mr. Bradford said that the railroads would "bury themselves" by increasing grain rates. Urging uniformity in grain rates, he pointed out that the "spread" between rail grain and "lake" grain would be widened if an increase in freight rates is authorized.

John A. Forshey, representing the Toledo, O., Board of Trade, declared that he would not object to a general increase in freight rates provided the tariffs are uniformly raised throughout the country. At the same time, he opposed the proposed increase on transit charges.

Subsidies Favored—The effect of the proposed increase on the price of meat was described by Paul Blanchard, representing Armour & Company, who declared that a 25 per cent increase on that product would be "the greatest red flag" that the commission"' could wave in the face of organized labor." Mr. Blanchard said that railroad operating losses should be compensated from national subsidies, adding that "ceiling prices on meat are so closely related to transportation costs that higher freight rates will be reflected immediately and fully in higher food prices."

"It is inconceivable that the Office of Price Administration would fail to recognize and allow for an increase in freight rates on pork products," he said. "If the freight charge increases, the worker will have to pay a half cent more a pound for pork chops." Mr. Blanchard also observed that an increase of 25 per cent on fresh meat shipments from Chicago, Ill., to Washington, D. C., might raise the charge from 80 cents to $1. He said that the increase would be at least 25 cents, when increases in loading, unloading, refrigeration charges and other costs are taken into consideration. Although it was pointed out by the bench that a 25-cent increase might add "only about one cent" to the cost of the average man's dinner, Mr. Blanchard still contends that a "serious view" of the situation would be taken by labor representatives.

Also appearing in opposition to the proposed increases on livestock and animal products were R. D. Rydner, Swift & Company; Warren H. Wagner, representing four meat-packing firms; Charles B. Heinemann, representing the Louisville, Ky., Livestock Exchange and other interests; Charles V. Hanlon, representing the Tanners' Council of America, and Charles E. Blaine and Lee J. Quasey, both of whom appeared in behalf of Texas and other southwestern livestock organizations.

Luther Walter, representing coal, livestock unloading and cotton interests, said that the railroads should be required to pay the agent stockyards the same percentage increase for unloading livestock and other costs as the commission might authorize in freight rates.

Say Iron Ore Is Profitable—Appearing in behalf of 41 iron ore mining companies, J. B. Putnam told the commission that a 25 per cent increase in freight rates would make "the rich carriers richer and the poor ones poorer." He conceded that 16 per cent of the carriers, including the Chicago & North Western, the Northern Pacific and the Chicago, Milwaukee, St. Paul & Pacific, are in need of more revenue, but also contended that "84 per cent of the applicants do not need it."

Mr. Putnam said that many roads, including the Great Northern, the Duluth, Missabe & Iron Range and the Lake Superior & Ishpeming, all of which serve Lake Superior mining interests, are "rich lines," adding that some of these carriers have been declaring annual dividends of 160 per cent for many years and that for the last five years "have been averaging 230 per cent."

Phillip H. Porter, representing the Wisconsin Coal Bureau, Inc., asserted that the "extremely profitable nature" of the Lake Superior rail lines and the "distressed conditions" of low-grade ore mining should be considered by the commission in formulating its decision, while R. Granville Curry, arguing in behalf of the Anthracite Institute, said that anthracite shippers, because they pay a higher freight rate than bituminous shippers, are "bearing more than their share of the transportation burden under an obsolete rate structure." Mr. Curry and Milton E. Diehl, representing the Eastern States Re-

tail Solid Fuel Conference, both requested that the commission apply any increase allowed on coal equally to both anthracite and bituminous.

J. W. Goodman, representing midwestern and northwestern lumber interests, opposed any increases in lumber rates. Wilbur LaRoe, appearing in behalf of paper and pulp interests, said that any long-range adjustment in freight rates at the present time might prove to be inequitable and suggested that the commission hold its record open "indefinitely" in order that it can continue to adjust rates from time to time. Another shippers' representative, J. VanDyke Norman, arguing in behalf of salt and lumber shippers, opposed lower rates for agricultural products which, he said, always have been the "pets" of the commission and never have borne their fair share of costs. He further proclaimed that the appearance of railroad executives before the commission, at which time they have described the financial stress of their respective roads, has done "great harm" to both railroad security owners and railroad revenues.

Among others who also appeared during the argument proceedings included William C. McCullough, representing west coast lumber interests; A. G. T. Moore, Southern Pine Association; George O. Tong, Minnesota Valley Canning Company; F. A. Leffingwell, Texas interests; L. E. Glaspie, Reynolds Metal Company and associated products; J. T. Money, representing fertilizer, clay, brick and tile interests; R. O. Youngerman, Mason City Brick & Tile Company, and M. S. Allison, representing cement and tile interests.

Also, Charles Donley, representing the American Institute of Bolt, Nut & Rivet Manufacturers; J. F. Lawrence, Mid-Continent rail shipping refiners; J. R. Lewallen, Anderson-Prichard Oil Corporation, the Col-Tex Refining Company and other southwestern refiners; A. G. Anderson, general traffic manager, Socony-Vacuum Oil Company; C. B. Bee, Oklahoma Corporation Commission; H. W. Prickett, Utah Department of Publicity and Industrial Development; J. A. Lucas, State of Iowa; Anthony Madler, State of Wisconsin Department of Agriculture, and H. E. Foley, representing the New England states.

Also T. R. Phillips, Western Growers Association; Lowe P. Siddons, representing sugar interests; C. W. Stadell, Kentucky and Illinois Coal agencies; A. J. Christiansen, Northern Illinois Coal Trade Association, and A. B. Pratt, Northern States Power Company.

During the course of the oral argument, a commission spokesman told newspapermen that the commission was receiving an unprecedented number of "scurrilous letters," most of which, he said, urged the I. C. C. to meet the demands of the railroads' proposals. He said many of the letters were anonymous.

Will Ask Reparations on Army Wartime Freight Bills

Acting upon Secretary of War Patterson's request that proceedings be initiated before "appropriate tribunals" to determine the reasonableness of charges on the Army's wartime freight shipments, Attorney General Clark announced this week that the Department of Justice will launch such proceedings and "effect recovery" in cases where it is found that the rates were "unreasonable." Presumably the "appropriate" tribunal would be the Interstate Commerce Commission, for the attorney general had previously rendered an opinion to the effect that the commission may entertain complaints of the government and award reparations with respect to rates which the government itself negotiates with carriers under Section 22 of the Interstate Commerce Act.

Much of the government's wartime shipments by rail moved under these so-called section 22 quotations which are not filed with the I. C. C. The Clark opinion as to the commission's jurisdiction was embodied in a letter to former Director Harold D. Smith of the Bureau of the Budget (see *Railway Age* of June 22, page 1235). The opinion had been requested by Mr. Smith following the investigation his bureau had conducted, at the request of Chairman Wheeler of the Senate committee on interstate commerce, into transportation charges paid by the War Department.

As noted in the *Railway Age* of February 9, page 333, the report on the investigation asserted that the federal government "has not only paid excessive charges in a stupendous amount before and after Pearl Harbor, but is still paying such excess charges on presently moving traffic and will continue to pay them until appropriate action is taken to remedy the situation." Attorney General Clark's announcement of the Department of Justice's agreement to follow up the matter stated that the decision to do so was reached as a result of a recent conference wherein the attorney general, Secretary Patterson and Director Webb of the Bureau of the Budget considered the findings of the Budget Bureau's investigators.

Punitive Per Diem Charges Opposed By A. A. R.

Holding that the Interstate Commerce Commission would be "without power to prescribe increased emergency per diem rates on a penalty basis," the Association of American Railroads has advised the commission that it is opposed to O. D. T. Director Johnson's suggestion that an investigation of car-service arrangements be instituted with a view to ordering the rental charge up from $1.15 per day to $2 in an effort to discourage "undue detention" of cars by railroads. It is because of its contention that punitive per diem would be illegal that the A. A. R. opposes the whole inquiry sought by the O. D. T. director, it being "manifest that penalty per diem is the substance of the proposal."

Colonel Johnson's suggestion was made in an August 29 letter to Acting I. C. C. Chairman Aitchison, and the commission invited interested parties to submit by September 30 their views "as to the need and desirability of such an investigation or as to other means that may be adopted to accomplish the object sought." The A. A. R. submission, dated September 28, follows that of the American Short Line Railroad Association, which also questioned the commission's authority to impose punitive per diem charges (see *Railway Age* of September 28, page 530). The A. A. R. emphasized that its individual member roads were "in no sense bound" by its response, but were "entirely free" to submit representations on their own behalf.

The response built up its detailed arguments under four main headings, the opposition position thus reached being summarized as follows:

"First: The investigation would be directed, *inter alia* but predominantly, to utilization of the per diem charge as a vehicle for the imposition of car detention penalties, thus abandoning just compensation to the car owner as the only justifiable basis for car hire.

"Second: This predominant purpose would be without sanction of law because the Interstate Commerce Act, Section 1(15), plainly confines the emergency powers of the commission over per diem to the prescription of compensatory rates in the event of carrier inability to agree.

"Third: Penalty per diem would do violence to the established theory of the commission regarding the nature and purpose of such charges.

"Fourth: In our best judgment, the proposed penalty increase would be ineffectual in a time of car stringency such as that postulated as the basis for the investigation, would penalize without relation to delinquency, and would in many situations disrupt or retard the efficient and expeditious movement and supply of cars."

O. P. A. Relaxes Controls Over Water Rates on Coal

Suspension of price control over transportation charges of contract carriers by water has been extended by the Office of Price Administration to include charges for transportation of coal except between North Atlantic ports. The action, effective October 1, also suspends control over "so-called unregulated common carriers by water, whose maximum rates or charges have not been established or regulated in the past by any other federal, state or municipal authority."

Facilities for transporting coal by water except between North Atlantic ports are now in approximate balance with demand, the O. P. A. announcement said. "Moreover," it added, "railroad and motor carrier rate levels largely control rates by water carriers so that suspension of price control is not expected to result in an unreasonable advance in rates. Because of the continued shortage of coal transportation facilities along the North Atlantic Coast, rates for these carriers will remain under control."

Car Service Orders

By Service Order No. 617 and its Amendment No. 1, the Interstate Commerce Commission has prohibited railroads serving points in Minnesota, Montana, North Dakota and South Dakota, and the Wisconsin points of Superior, East End and Itasca, from placing any car for grain loading unless a permit for such loading has been issued by Fred S. Keiser, who will administer the order as I. C. C. agent with headquarters at Chicago. The order became ef-

fective October 1 and will expire November 15, unless otherwise modified. Exceptions allow the loading of wheat from the permit territory to Duluth, Minn., Glenwood, Montevideo, Minneapolis, Thief River Falls, Staples, St. Cloud, St. Paul, Wilmer, Grand Forks, N. D., Superior, Wis., East End and Itasca; and the loading of any grain to points in Wyoming, Colorado, Utah, Nevada, Idaho, Washington, Oregon, and California.

The situation created by the utility strike in the Pittsburgh, Pa., area brought Amendments Nos. 2 and 3 to Service Order No. 559 which provides for super-demurrage charges on gondola and hopper cars. Amendment No. 2 provides that the penalty charges shall not apply to cars, loaded with commodities requiring electric cranes or other similar electrical machinery for unloading, which were on hand at Pittsburgh or in Allegheny County, Pa., at 7:00 a.m. October 1 and those arriving after that time but before 7:00 a.m. October 7. Amendment No. 3 provides like relief with respect to cars on hand in Beaver County, Pa., at 7:00 a.m. October 2 and those arriving after that time but before 7:00 a.m. October 8.

Amendment No. 2 to Service Order No. 411 postponed from September 30 until November 30 the expiration date of this order which authorizes initial icing of refrigerator cars at carriers' option at Roseville, Calif., San Jose and Stockton.

Highway Users Map Program for Future

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tion of State Highway Officials "for its recommendations concerning dimensions, weights and speeds of motor vehicles and its suggestions for liberalized limitations of highway use." Also, it urged that these A. A. S. H. O. recommendations "become the minimum for the present," but "they should not limit further progress in any state where different standards might be justified."

For Bigger Buses—The committee's Recommendation No. 3 called for adoption at the coming sessions of the state legislatures of laws permitting the operation of intercity buses 102 inches wide, such vehicles to be restricted generally to routes where the highway surface is 20 feet wide and to be permitted on highway segments of lesser width "only with the expressed permission of the state highway authorities." The committee's final recommendation was that the A. A. S. H. O. "be urged to consider increasing height limitations from 12½ feet to 13½ feet."

The committee on highway taxation, finance and administration complained that "hundreds of millions of dollars of special highway user taxes have been spent for non-highway purposes, and more money has been unwisely spent on unplanned projects." It went on to advise that "as the country embarks upon a new era of highway improvement," highway users "have a more timely opportunity than ever before accorded them to obtain roads which will conform to the traffic needs." It was intimated among other things that the interests represented in the congress should give active support to the proposition that "every cent of motor vehicle tax revenues should be used on well planned programs." Also, it was suggested that "recognition should be given to increased revenues resulting from increasing use of the highways before considering higher rates of taxation."

With respect to federal-aid highways, the committee noted current contentions that construction of highways in whole or in part by the federal government should supplant the federal-aid system. "One of the most serious trends in this direction," the report said, "is the growing tendency in Congress and elsewhere to relate federal excise taxes to federal aid for highways." The committee indicated its view that these automotive excise taxes are not properly related to the financing of federal highway work, since they have been used as emergency revenue measures of war and depression periods.

General Revenue for Roads—"Federal aid under the sound leadership of our Public Roads Administration," the report went on, "provides the only logical means of developing a nationwide connected system of state-owned highways. It also provides the only proved method for close cooperation in highway construction between the states and the federal government and between adjoining states themselves in the matter of sound engineering and financial planning. The original and long-standing concept of federal aid should be preserved and the federal government should contribute to the cost of highways from sources of general revenue because of the benefits of highways to the national defense, the general welfare, delivery of the mails, and interstate commerce. Furthermore, the federal grants in aid should be limited in such amounts as are commensurate with the recognized national benefits."

With respect to highway taxation, the report asserted that normally state and federal taxes on highway transportation "approximate $2 billion annually," while highway users "in addition" pay the "same taxes as other citizens for support of general government." The committee's general conclusion on this matter was set forth as follows: "The annual collections from motor vehicle use taxes should not exceed the motor vehicle owner's proper share of the cost of highways of general motor use in line with a carefully prepared, and publicly released, annual budget based upon a sound state highway plan, nor should they be excessive to the point of discouraging the use of motor vehicles; nor should they exceed the ability of the motorist to pay."

Addresses at the Congress' sessions included those of Alfred P. Sloan, Jr., chairman of the General Motors Corporation and chairman of the Highway Users Conference; Albert Bradley, executive vice-president of General Motors; Charles L. Dearing of the Brookings Institution, who spoke on How We Pay for Our Highways; and William L. Chenery, publisher of Colliers, whose subject was Highway Barriers, a Threat to Society.

It also was disclosed at the meeting that the American Automobile Association has launched a drive to secure the earliest possible completion of the projected 40,000-mile system of interstate highways, authorized by Congress in 1944.

Designation of the routes to be included in the network is "virtually complete," according to W. A. Stinchcomb, chairman of the A. A. A.'s highway and legislative committee. "The job now is for every highway department, every public official, every city planner and every user of the nation's highways to tackle the many tasks that must be undertaken before this highway system . . . can become a reality," he said.

Steelman's Report Notes Rail Burdens

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and air express during the first 6 months of 1946 totaled 13,483,000 ton-miles, an increase of 13 per cent over the same period last year. He said that shipments in June were 17 per cent above June, 1945, and that "an even greater increase" may be expected in the coming months.

Negro, Former Army Chaplain, Complains Against S. A. L.

Charles E. Byrd, a negro of Hopewell Junction, N. Y., has filed with the Interstate Commerce Commission a complaint charging the Seaboard Air Line with undue discrimination against negro passengers. The complaint, which says Mr. Byrd was a major in the Army Chaplain Corps at the time, is based on his unsuccessful effort to obtain Pullman accommodations for himself and his wife for a Tampa, Fla.-New York journey last February.

On February 15th, it says, Mr. Byrd telephoned to the Seaboard office in Tampa's Hillsboro Hotel, and obtained reservations for himself and his wife, with no questions asked concerning his race. When "official orders" caused a change in his plans, Mr. Byrd called on February 18 for a change in his reservations. During the course of that telephone conversation he was asked whether he was white or colored. On learning that Mr. Byrd was a negro, the complaint charged, the railroad refused to give him any accommodations; and also refused when he sought the accommodations through the transportation office at the Army's nearby MacDill Field. Mr. Byrd seeks damages in the amount of $2,500.

Certificate Giving Anti-Trust Immunity Expires

Basing his determination on the Department of Justice's view that rate conferences and rate bureaus "can function effectively without violating the anti-trust laws," Administrator John D. Small of the Civilian Production Administration permitted the expiration on October 1 of Certificate No. 44 which was issued in March, 1943, by the chairman of the former War Production Board to give carrier rate bureaus and other joint-action arrangements wartime immunity from the anti-trust statutes. Mr. Small advised O. D. T. Director J. Monroe

Johnson of his decision in a September 27 letter which read as follows:

"This is in reply to your letters of August 2 and September 9 concerning the amendment of the withdrawal of Certificate No. 44 so as to keep the certificate in effect until such time as the matters involved therein had been finally disposed of either by judicial pronouncement or Congressional action.

"The letters in support of your position have been examined by me and members of my staff following the conference held at your request in Mr. Steelman's [director of the Office of War Mobilization and Reconversion] office with Judge Collett [of President Truman's staff], Assistant Attorney General Berge and myself. The position taken by the Department of Justice that rate conferences and rate bureaus can function effectively without violating the anti-trust laws has resulted in the determination that there is no justification for the further amendment of the withdrawal of Certificate No. 44, and it will be allowed to expire on October 1, 1946. The Office of War Mobilization and Reconversion has concurred in this determination."

O. D. T. Director Johnson was away from Washington this week, and was thus not available for comment on the C. P. A. decision. In railroad circles there were expressions of hope that the situation created by the expiration might be resolved without too much confusion and disruption of established practices. It was understood that the matter of future procedures was under study by railroad counsel and other interested railway officers.

Representation of Employees

The International Brotherhood of Blacksmiths, Drop Forgers and Helpers and the International Brotherhood of Boilermakers, Iron Ship Builders and Helpers of America, each operating through the Railway Employees' Department, American Federation of Labor, have supplanted the Brotherhood of Railroad Shopcrafts of America as the representative of blacksmiths and boilermakers, including their helpers and apprentices, employed by the Washington, D. C., Terminal Company, as the result of a recent election which has been certified by the National Meditation Board.

In an another election, the Brotherhood of Locomotive Engineers, by virtue of a 13 to 12 victory over the Brotherhood of Locomotive Firemen and Enginemen, replaced the latter union as the representative of locomotive engineers employed by the Chicago & Western Indiana. The B. of L. F. & E., however, defeated the B. of L. E., 22 to 16, to retain its right to represent firemen, hostlers and hostlers' helpers also employed by the C. & W. I.

As the result of other elections involving employees who formerly were without representation, the Brotherhood of Maintenance of Way Employees was chosen to represent maintenance of way employees of the Winona and the Order of Railroad Telegraphers was selected to represent telegraphers and towermen employed by the Pekin & Pekin Union. Because less than a majority of those eligible to vote actually voted, the N. M. B. failed to certify another election which the International Federation of Technical Engineers, Architects and Draftsmen's Unions, A. F. of L., sought certification as bargaining agent of St. Louis-San Francisco roadmasters. These roadmasters, therefore, remain without representation.

The board also amended a previous certification which now provides that the Association of Maintenance of Way and Miscellaneous Employees, Inc., affiliated with the United Railroad Workers of America, Congress of Industrial Organizations, will act as the representative of all maintenance of way employees, including steel bridge gang employees, of the Atchison, Topeka & Santa Fe. The steel bridge gang employees formerly were covered by a labor agreement and were represented by the Employees of the System Steel Bridge Forces.

I. C. C. Rejects Coordination Plan of Burlington

Reversing the previous decision of its Division 4 the Interstate Commerce Commission, in a report on reconsideration, has denied the Chicago, Burlington & Quincy's application for authority to abandon a branch from Burch, Iowa, to Osceola, 53.15 miles, upon institution of alternate service by trackage rights on a Chicago Great Western line which is substantially parallel to it. The proceeding is Finance Docket No. 14677, and the majority report was accompanied by the dissent of Commissioner Mahaffie who asserted with language from the Interstate Commerce Act's declaration of policy, that the proposed arrangement would "promote . . . sound economic conditions in transportation and among the several carriers."

The abandonment was opposed by the Iowa State Commerce Commission and various communities, school districts, and business interests served by the branch. The commission majority's adverse report was based generally on findings that the proposed arrangement would work "hardships" on communities not served by the C. G. W.'s line. Highway transportation was not considered by the commission to be a satisfactory alternative because of evidence that many highways in the territory "are unfit for heavy trucking the year 'round."

Meanwhile Burlington figures on prospective savings from the proposed arrangement were discounted, in which connection the commission found generally that "the applicant is not a weak carrier and so greatly in need of additional income that we should give its financial condition special consideration in balancing the respective interests." The Burlington contended that the proposed arrangement would enable it to give better service at lower cost, so far as bridge traffic is concerned, and that local traffic had been insufficient to justify operation of the branch. It estimated that if the proposed arrangement had been in effect in recent years, the net savings resulting therefrom would have been $64,001 in 1942, $73,676 in 1943, and $82,725 during the first 10 months of 1944.

The proposed plan contemplated that the Burlington's highway affiliate would establish bus operations in substitution for the branch's passenger service. This prospective elimination of passenger train operations seemed "significant" to the commission; for "it appears probable that a substantial percentage of the savings expected would result from the discontinuance of passenger train service." Then came advice to the effect that if the passenger service is being performed at an "unreasonable loss" the applicant "has a remedy before the state commission."

The majority, so it said, recognized "the desirability of the joint use of railroad properties where duplicate facilities exist and both the public and the applicant will benefit, or where any adverse effect on the public is slight and is outweighed by other advantages accruing to the public therefrom." It added, however, that "it is inconsistent with the public interest to authorize the abandonment of a line of railroad where only a portion of its traffic can be handled over the alternate route to be substituted and substantial public injury will result from the loss of transportation facilities for the remaining traffic, and the only advantage to accrue from the transaction inures to the benefit of the carrier."

Dissenter Mahaffie reminded his colleagues that "if we are to have a sound railroad system of transportation it is essential that it be adjusted from time to time to the changing transportation needs of the country."

"This," he added, "requires abandonment of lines no longer needed, as well as the construction of new lines. It also sometimes requires the joint use of lines as well as terminals in order to hold down expenses and prevent waste caused by duplication. In this proceeding we have before us the question whether a line of 53 miles may properly be abandoned. Its chief use is for bridge traffic. Its local freight traffic, on the average, amounts to only about three-fourths of one car handled on each 53-mile trip. The revenue from this local traffic is, of course, wholly inadequate to meet the expense of the service. Of itself it is clearly a drain on the transportation system of the country. It is axiomatic that wasteful expenditures on one service or one piece of property must in the long run be made up from other operations."

Commissioner Miller joined in the Mahaffie expression, while Chairman Barnard did not participate in the disposition of the proceeding. Messrs. Mahaffie and Miller comprise the Division 4 majority which made the prior report in the proceedings (see *Railway Age* of January 12, page 170.)

Equipment and Supplies

LOCOMOTIVES

The South African Railways are inquiring for 100 steam locomotives of either the 4-8-2 or the 2-8-4 type.

The Chicago, Indianapolis & Louisville has ordered one 1,500-hp. road-type

Diesel-electric switching locomotive for early delivery from the American Locomotive Company. The engine will be used to move French Lick Springs, Ind., passenger trains between that station and Bloomington, and to haul local freight and perform switching operations at other times of the day. A 1,000-hp. Diesel-electric switching locomotive has been ordered from Fairbanks, Morse & Co., for assignment at the Lafayette (Ind.) yard.

FREIGHT CARS

The GULF, MOBILE & OHIO has ordered from the American Car & Foundry Co., 420 40½-ft. 50-ton box cars and 80 40½-ft. automobile cars. This is part of the equipment for which an inquiry was reported in the *Railway Age* for August 17, page 314.

The DETROIT & TOLEDO SHORE LINE has ordered 50 70-ton covered steel hopper cars from the Greenville Steel Car Company. The inquiry for this equipment was reported in the *Railway Age* for August 5, page 205.

The CHICAGO, INDIANAPOLIS & LOUISVILLE is inquiring for 25 40-ton 40-ft. stock cars (of which 15 are to be double-decked and 10 single-decked), 100 70-ton 53½-ft. flat cars, 100 70-ton gondolas, 100 70-ton self-clearing steel hopper cars, 100 50-ton 40-ft. steel-sheathed box cars and 100 50-ton 50-ft. steel-sheathed box cars.

The SOUTHERN PACIFIC has ordered 1,000 50-ton 40-ft. box cars from the Pullman-Standard Car Manufacturing Company. The inquiry for these cars, which are to be of lightweight construction, steel-sheathed, wood-lined and are to be built at Bessemer, Ala., was reported in the *Railway Age* for August 24, page 355.

The ATCHISON, TOPEKA & SANTA FE has ordered 750 40½-ft. 50-ton steel box cars from the General American Transportation Corporation, with delivery scheduled for the second half of 1947. This order is part of an inquiry for 1,750 box cars reported in the *Railway Age* of August 10. The remainder of the cars were ordered from the road's shops, as noted in the August 24 issue of *Railway Age*.

IRON AND STEEL

The SEABOARD AIR LINE has ordered 25,000 tons of rails from the Bethlehem Steel Company and 21,000 tons from the Tennessee Coal, Iron & Railroad Co.

SIGNALING

The RICHMOND, FREDERICKSBURG & POTOMAC has placed an order with the Union Switch & Signal Company for the signal material required to enlarge the existing Style C control machine at Tower FB, Fredericksburg, Va., for controlling a remote location 4 miles south of Fredericksburg, and an additional signal function at FB tower, by the code system, involving nine Style A-5 electro-pneumatic switchc layouts, with the necessary Style R-2 and N-2 color-light signal units. The two existing crossovers between the main tracks and former sidings will be retained, while a Style T-21 hand-thrown switch layout with electric lock equipment will be added on each end of the crossovers. The present system of train control and cab signaling for normal direction running will be provided on the four tracks between the remote location and FB tower. The installation work will be handled by the railroad's own forces.

Supply Trade

Ray Ronald has been appointed Western division sales manager of the **Hyster Company,** with headquarters at Portland, Ore.

H. W. Keyser has been appointed assistant manager, Philadelphia, Pa., district office, for the **Safety Car Heating & Lighting Co., Inc.**

C. M. Taylor has been elected executive vice-president of the **Lincoln Electric Company.** Mr. Taylor has been with Lincoln since 1916. He enlisted in the air corps in 1917 and returned at the end of the war, when he was appointed a foreman. Later he was placed in charge of the time study and methods department, advanced to assistant superintendent and then superintendent. Appointed vice-president in charge of sales in 1928, he has served on the board of directors since 1927.

C. M. Taylor

Willard G. Hartman has been elected president, general manager and director of the **Lewis Bolt & Nut Co.,** at Minneapolis, Minn.

Wesley N. Gordon has been appointed manager of the alloy sales division in the general sales department of the **United States Steel Supply Company,** with headquarters in Chicago.

Paul H. Maurer, whose appointment as chief engineer in charge of all production engineering, research and development for the **National Pneumatic Company** was announced in last week's *Railway Age,* attended the Newark (N. J.) College of Engineering and the University of Michigan. At the completion of his education, he was employed by the Eclipse aviation division of the Bendix Aviation Corporation as an engineer on aircraft electrical equipment. Transferred, successively, to the Eclipse machine division and the B. K. division, Mr. Maurer subsequently joined the Hudson Motor Car Company as electrical engineer in charge of car engineering.

Paul H. Maurer

After resigning from Hudson, he was appointed executive engineer of the Redmond Company, and in January, 1945, he joined National Pneumatic's engineering staff as a research engineer.

Daniel C. Murphy, formerly general manager of the Gould Coupler Works, Depew, N. Y., has been appointed vice-president in charge of operations for the Rochester, N. Y., and Depew plants of the **Symington-Gould Corporation.**

Frederick A. Purdy has been appointed manager of the new Los Angeles, Calif., plant of **Joseph T. Ryerson & Son.** Mr. Purdy joined Ryerson in 1931, two years after his graduation from the University of Michigan school of engineering. Serving first as an engineer at the Buffalo, N. Y. plant of the company, he later represented the firm in New York state, heading the Rochester (N. Y.) district sales office for four years.

Frederick A. Purdy

Associated with Mr. Purdy is **Theodore L. Kishbaugh** who has been named assistant plant manager. See the *Railway Age* for September 21, page 497.) **Thomas E. Williams** will be in charge of the operating and service divisions. **Vernon D. Rogers** has been appointed office and

credit manager. **George W. Gilliland**, who has been in charge of the Los Angeles office, will continue in a sales capacity. Other members of the field sales staff are **John Fennie, Harold Christian, Richard DeLand, Merle Anderson, Milford Tiner and Ernest Lindgren.**

Harrison Wood, assistant district manager since 1941, has been appointed New York district manager for **SKF Industries, Inc.**, to succeed **John D. Williamson**, who resigned because of ill health after serving as head of the district for 23 years.

Russell F. Oakes, formerly chief, Office of Technical Information, Office of the Chief of Transportation, United States Army, has been appointed executive assistant to the vice-president of the **Clark Equipment Company** and general manager of the Clark Tructractor division.

Charles E. Conlin, formerly in charge of weed control on the Southern Pacific, has been appointed head of the **California Spray-Chemical Corporation's** new railroad weed control service, with headquarters at the Richmond, Calif., plant.

D. P. Wertheimer, formerly assistant sales manager, has been appointed sales manager of the **Sterling Bolt Company**, Chicago, to succeed **J. B. Epstein.**

R. W. Lea, vice-president of finance since 1939 for the **Johns-Manville Corporation**, has been elected president to succeed **Lewis H. Brown**, who was elected chairman of the board and chief executive officer. **Alvin Brown** was elected a director and vice-president for finance and **John P. Syme** was elected vice-president and assistant to the chairman.

The following appointments as general managers of the six new operating divisions into which the company has been reorganized were announced: **J. A. O'Brien**, industrial products division; **Harold R. Berlin**, building products division; **A. S. Elsenbast**, celite division, and **E. C. Brockett**, Canadian products division. **A. F. Fisher**, vice-president for production, will act as general manager of the asbestos fiber division and **E. S. Crosby** will continue as general manager of the international division.

R. H. Beight has been appointed district engineer at Fort Worth, Tex., where representation has been recently restored. **Mariano A. Montero** has been appointed district engineer of a newly created district to serve Mexican railroads, with headquarters at San Luis Potosi, Mex. He will be assisted by **Fred M. Smith**, service engineer, formerly of the La Grange (Ill.) plant. **Gerald C. Smith** has been appointed district engineer of the Denver service headquarters, now under the jurisdiction of the St. Louis region, succeeding **W. E. Dunn**, who has been appointed regional service manager of the Chicago region.

The **Minneapolis-Honeywell Regulator Company** has announced the following changes in its field and home office personnel: **James S. Locke**, formerly regional sales manager of the Chicago district of the air conditioning controls division, has been appointed sales manager for the division, with headquarters in Minneapolis, Minn., to succeed **George D. Guler**, who has been appointed regional manager, with headquarters in Atlanta, Ga. Mr. Guler succeeds **Albert H. Koch** who has been appointed branch manager at Philadelphia, Pa. **J. F. Cummiskey** has been appointed Chicago regional sales manager of the air conditioning controls division, replacing Mr. Locke. **L. C. Johnson** has been promoted to branch manager in Milwaukee, Wis., to succeed **Harold Pride**, resigned, and **J. C. Dorsey**, acting branch manager in Philadelphia has been placed in charge of the company's business in Philadelphia. **T. S. Carley** has been promoted to sales manager of the wholesale division, Minneapolis, and will continue as sales manager of the stoker controls division.

Charles Layng, western editor of *Railway Age*, with headquarters at Chicago, has relinquished that post for reasons of health, but retains a connection with the editorial staff. He has been succeeded as western editor by **Neal D. Howard**, editor of "Railway Engineering & Maintenance," who retains that position, but who turns over his duties as engineering editor of *Railway Age* to **Merwin H. Dick**, managing editor of "Railway Engineering & Maintenance," who continues to hold that position. Photographs and biographical sketches of Messrs. Layng, Howard and Dick were published in the issue of September 23, 1944, page 492. **William H. Schmidt, Jr.**, who before the war was an associate editor in the New York office, has been named assistant western editor with headquarters at Chicago.

W. H. Schmidt, Jr.

C. R. Wood and **LeRoy F. Shaw** have been appointed branch parts managers of two new locomotive repair shops being built by the Electro-Motive division of the **General Motors Corporation** at Jacksonville Fla., and Baltimore, Md. Other personnel changes in the Electro-Motive division are: **Milton H. Gardner**, regional service manager at Chicago, who has been transferred to the firm's new regional field service organization at St. Louis, and **M. L. Williams**, who has been appointed parts and stores representative there. Mr. Gardner will be assisted by **J. E. O'Leary**, formerly field engineer of the central region, **Earl Stroud**, district engineer at St. Louis, and **A. M. Dodd**, who has been transferred from Cincinnati, Ohio.

John E. Fontaine has been appointed manager at Houston, Texas, for the **Graybar Electric Company. Lynn A. Haley** suceeds Mr. Fontaine as manager at Beaumont, Texas. Both appointments become effective October 16.

Financial

CHICAGO, ROCK ISLAND & PACIFIC.—*Plan to simplify debt structure.*—Aaron Colnon, co-trustee of this company, has asked Feneral District Judge Michael L. Igoe, Chicago, to approve a plan for paying off divisional bond holders and replacing present 4½ per cent bonds, Series A, with new general mortgage 3 per cent bonds. The plan provides that $25,845,445 be distributed to holders of outstanding general mortgage bonds as payment of interest at 3 per cent from date of default through July 1, 1946. In return, holders of the general mortgage 4 per cent bonds would surrender all unpaid coupons from July 1, 1934, to maturity for cancellation, and accept modified bonds with 3 per cent interest running to maturity. Holders of divisional bonds would be paid off in the following amounts per each $1,000 bond: St. Paul & Kansas City Short Line, $635, requiring $11,700,800; Rock Island, Arkansas & Louisiana, $740, requiring $8,140,000; Burlington, Cedar Rapids & Northern, $580, requiring $6,380,000; Choctaw, Oklahoma & Gulf, $1,000, requiring $5,411,000, and Little Rock & Hot Springs Western, $397.90, requiring $453,600. Under the plan approval of these payments by the court is asked if 75 per cent of holders of each of the divisional mortgages vote to accept them as full discharge of claims. It further specified that holders of 4½ per cent bonds be given the right to change their holdings for new 3 per cent general mortgage bonds, "with certain equalizations made up from cash received by first and refunding mortgage trustee." The program would require approximately $57,930,845, leaving $15,000,000 working capital for the road.

PENNSYLVANIA. — *Trackage Rights.* — Division 4 of the Interstate Commerce Commission has authorized this road, as lessee of the Pennsylvania, Ohio & Detroit, to acquire trackage rights over 1,202 ft. of New York, Chicago & St. Louis track in Bellevue, Ohio. The arrangements are part of a plan whereby a new interlocking plant will be installed and operations simplified at that point where the tracks of both roads run parallel to each other and cross the New York Central and Wheeling & Lake Erie tracks at grade.

ST. LOUIS-SAN FRANCISCO.—*Equipment Trust Certificates.*—Trustees of this road have awarded $5,500,000 of equipment trust certificates to Salomon Brothers & Hutzler on a bid of 99.93 for a 1⅞ per cent coupon. No public offering of the certificates will be made. (See the *Railway Age* for September 21, page 499.)

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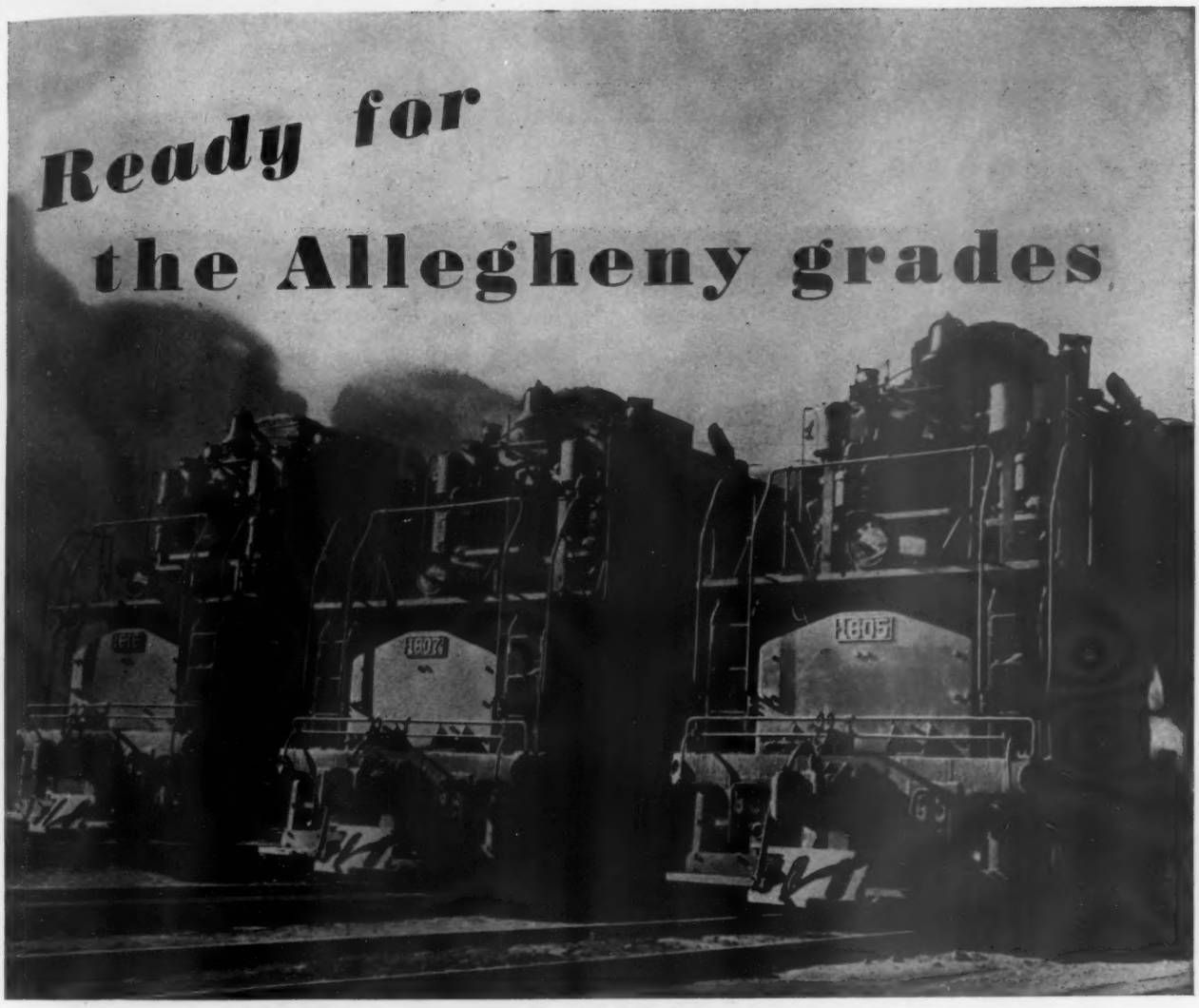
Ready for the Allegheny grades



Over the Alleghenies, the C&O lines reach 2,072 feet above sea level and there are grades in excess of 1.14 per cent.

To handle its heavy freight traffic in this mountainous terrain, the C&O employs forty-five of these giant, four-cylinder, six-coupled, articulated steam locomotives, built by Lima.

LIMA LOCOMOTIVE WORKS — LIMA LOCOMOTIVE WORKS INCORPORATED — INCORPORATED, LIMA, OHIO

Average Prices Stocks and Bonds

	Oct. 1	Last week	Last year
Average prices of 20 representative railway stocks..	47.85	48.09	58.70
Average prices of 20 representative railway bonds..	88.68	87.85	98.10

Dividends Declared

Atchison, Topeka & Santa Fe.—$1.50, payable December 2 to holders of record October 25.

Atlantic Coast Line.—5% non-cum. preferred, $2.50, semi-annually, payable November 12 to holders of record October 25.

Cleveland, Cincinnati, Chicago & St. Louis.—Preferred, $1.25 quarterly, payable October 31 to holders of record October 9.

Norfolk & Western. — Adjustment preferred, $1.00, quarterly, payable November 9 to holders of record October 17.

Construction

BALTIMORE & OHIO CHICAGO TERMINAL.—This road has awarded a contract to the Bates & Rogers Construction Corp. for the construction of concrete platforms at Riverdale, Ill. The approximate cost of the project is $30,000.

HAMPTON & BRANCHVILLE.—Denying an application by the Atlantic Coast Line and its affiliate, the Charleston & Western Carolina, for reopening, reconsideration and oral argument in the Finance Docket No. 14957 proceeding, the Interstate Commerce Commission has ordered that its certificate of June 11, which authorized the H. & B. to extend its line from Hampton, S. C., to connect with the Seaboard Air Line at Luray and with the Southern at Lena, a total distance of approximately 12 miles, be made effective 30 days from September 12. The commission further ordered that the construction be completed within one year after November 1. At the same time, the commission modified "Condition 3" of its June 11 certificate (see *Railway Age*, July 6, page 28) to stipulate that the H. & B. "shall agree to permit the Charleston & Western Carolina . . . free access on similar terms to any other industry that hereafter may be established at Hampton, S. C., to which it may control the means of entry, provided that the carrier last mentioned, prior to the effective date of the certificate . . . shall enter into an agreement with the applicant that the applicant likewise shall be permitted free access on similar terms to any industry which hereafter may be located in the same city to which the C. & W. C. may control the means of entry."

ROYAL TRAIN.—The Railway Gazette (London) describes three new passenger train cars built by the London Midland & Scottish early in the war for the royal train. In addition to the "king's saloon" and the "queen's saloon," each a luxuriously-fitted bedroom-bath-lounge car, the train is provided with a power car. This service vehicle has sleeping accommodations for the train crew, a baggage compartment, a 25-line automatic telephone exchange, spare parts for the train, and engine-driven generator sets to supply current for lighting, heating, ventilation and air conditioning.

Railway Officers

EXECUTIVE

Herbert A. Taylor, vice-president and general counsel of the Erie, with headquarters at Cleveland, Ohio, retired on September 30 after an association of 47 years with the Erie. He will continue to be a member of the Erie board of directors.

Frank I. Snyder, vice-president and general manager of the Bessemer & Lake Erie, with headquarters at Pittsburgh, Pa., has been elected president, succeeding **Robert T. Rossell,** who retired on October 1 after 45 years' service. Mr. Rossell's retirement on August 1 from the presidencies of the Union, the Youngstown & Northern, and the Etna & Montrose was announced in the August 31 issue of *Railway Age*. **Frank R. Layng,** chief engineer at Pittsburgh, has been named to the additional office of vice-president, while **Clifford S. Leet,** assistant general manager there, has been appointed assistant to president. Mr. Leet will continue to have supervision over real estate, tax, and related matters.

FINANCIAL, LEGAL AND ACCOUNTING

Willis T. Pierson, general solicitor of the Erie, has been appointed general counsel, with headquarters as before at Cleveland, Ohio, succeeding Herbert A. Taylor, whose retirement as vice-president and general counsel is announced elsewhere in these columns.

C. F. Schwarz, assistant controller of the Chicago & Eastern Illinois, with headquarters at Chicago, has been elected controller, with the same headquarters, succeeding **J. C. Sites,** who has retired after 40 years of service with the road. **F. W. Lewis,** station accountant, has been elected assistant controller, succeeding Mr. Schwarz. **R. E. Sansom,** chief clerk to the auditor of freight and passenger accounts, has been appointed auditor of that department, succeeding **E. E. O'Reilly,** who has retired after 54 years of service.

OPERATING

Harold C. Mauney, trainmaster of the Southern at Alexandria, Va., has been appointed to the newly-created position of assistant superintendent at Greenville, S. C.

L. H. Beam has been appointed trainmaster of the Lehigh & New England with headquarters at Bath, Pa., and the position of assistant trainmaster has been abolished.

Charles H. Longman, assistant to the vice-president in charge of operations of the Chicago & North Western, with headquarters at Chicago, has been promoted to general manager of the road's eastern district, with the same headquarters, succeeding **Fred J. Byington,** who has retired after 56 years of service. Mr. Longman is succeeded by **Leon B. Kendall,** assistant general manager of the eastern district. **Joseph J. Stein,** general superintendent, dining car department, succeeds Mr. Kendall.

Robert A. Wardle, assistant trainmaster of the Southern Pacific, with headquarters at Sacramento, Cal., has been promoted to terminal superintendent, with the same headquarters.

J. H. Lerbs has been appointed superintendent of the Hoboken Manufacturers Railroad, with headquarters at Hoboken, N. J., succeeding **A. R. Macgowan,** who has resigned.

William Bartley, superintendent of transportation of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, retired at the end of September after 51 years of service in railroading.

Stanley F. Mackay, whose appointment as general manager of the New York, New Haven & Hartford, with headquarters at New Haven, Conn., was announced in a recent issue of *Railway Age*, was born at Meriden, Conn., on July 20, 1888, and entered railway service in 1904 with the New Haven. He served subsequently as engine, passenger and freight car distributor, as well as in various clerical posts, advancing to a division superintendency in 1928, in which post he served at Taunton, Mass., and Providence, R. I. In 1934, Mr. Mackay was appointed superintendent of transportation at New Haven, and became general superintendent of transportation there in 1935. He later advanced to manager of transportation, the post he held at the time of his recent promotion.

Stanley F. Mackay

R. D. Keith has been appointed assistant superintendent of the sleeping and dining car department of the Grand Trunk Western, with headquarters at Battle Creek, Mich.

Paul R. Goulett, whose appointment as assistant general manager of the New York, New Haven & Hartford, with headquarters at New Haven, Conn., was announced in a recent issue of *Railway Age*, was born at Stevenson, Conn, on June 9, 1896. He began railroading in 1911 at

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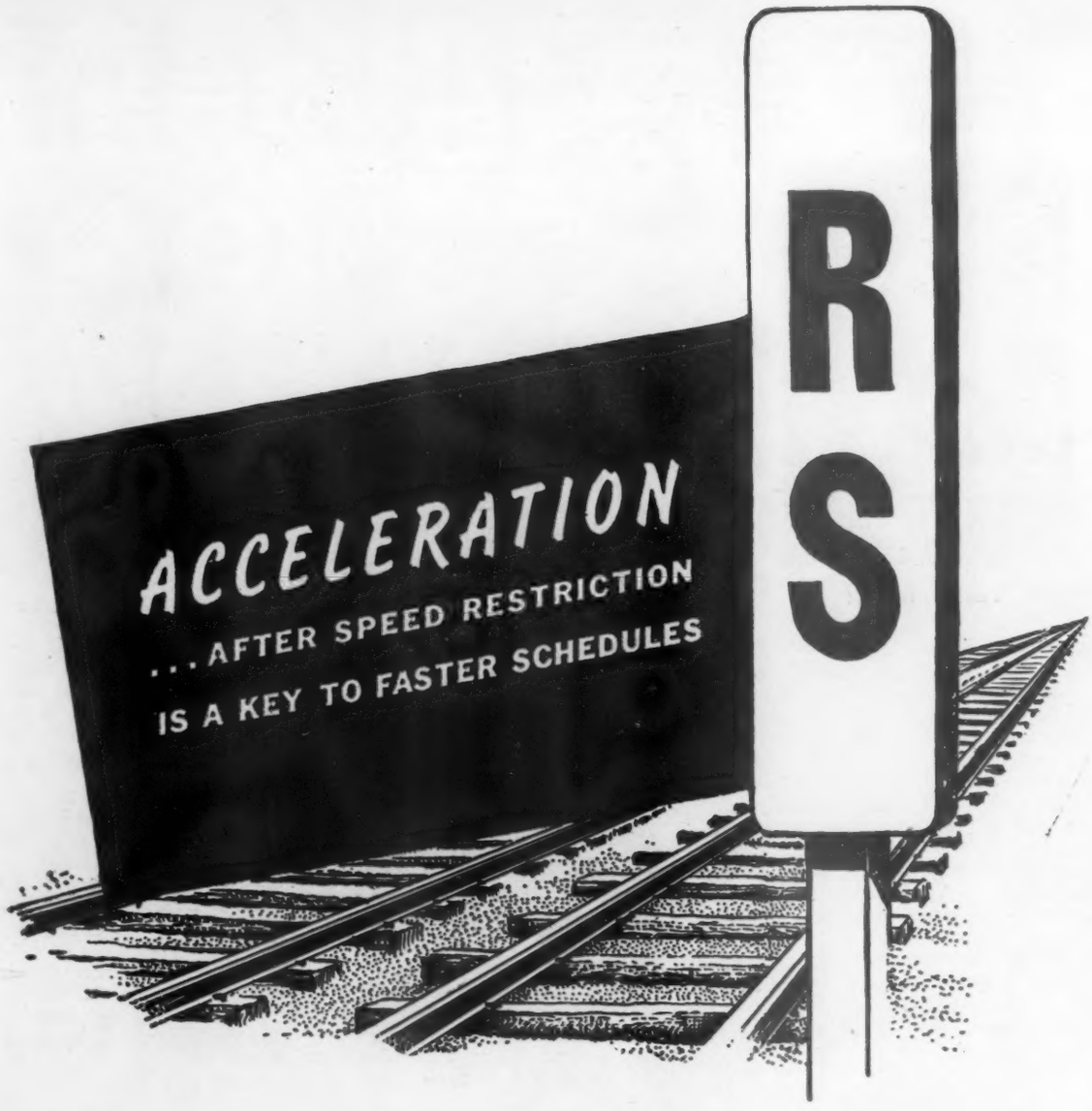

The ability of a locomotive to regain speed after slow-downs is an important factor in schedule making.

Locomotives equipped with the Franklin System of Steam Distribution are making outstanding records in this respect. Their increased horsepower, particularly above 30 mph, is permitting the speeding up of schedules and the making of difficult schedules under adverse weather or operating conditions.

Under road tests, for example, a 4-6-2 Franklin-equipped poppet-valve locomotive demonstrated its ability to accelerate a 1000-ton train on level track from 40 to 75 mph in 6¼ minutes. A similar piston-valve locomotive required 11 minutes — or almost five minutes more. Franklin-equipped Pennsylvania T-1 Class locomotives are capable of taking a 1000-ton train from 30 to 100 mph in 8 minutes.

Application of the Franklin System of Steam Distribution is practical for either new or existing locomotives — for either freight or passenger service. May we show you what it will accomplish with your own motive power?

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

Stevenson as a spare telegraph operator and agent, becoming agent there in 1912, and subsequently served as telegraph operator at Pittsfield, Mass., and Waterbury, Conn. He served successively as assistant passenger car distributor, car service in-

Paul R. Goulett

spector, correspondence clerk, statistician assistant chief clerk, and chief clerk to general manager, all at New Haven, from 1916 to 1934, when he was named transportation assistant. Mr. Goulett became superintendent of passenger transportation in 1935 at New Haven, and later that year went to Harlem River, N. Y., as assistant superintendent, returning to New Haven in 1937 in the same capacity and was promoted to superintendent there later that year. He held the latter post at the time of his recent appointment.

Herbert E. Bixler, whose appointment as general superintendent of transportation of the New York, New Haven & Hartford, with headquarters at New Haven, Conn., was announced in a recent issue of *Railway Age,* was born at New London, Conn., on June 10, 1911, and entered railroad service with the New Haven in June,

Herbert E. Bixler

1936 as a car service inspector. Three months later he became transportation inspector, and in 1937 was advanced to merchandise inspector. In 1941, Mr. Bixler was appointed superintendent of freight transportation at New Haven, then was named transportation assistant in 1944, maintaining the latter post until his recent advancement.

C. C. Young, chief dispatcher of the Canadian Pacific at Nelson, B. C., has been promoted to assistant superintendent, with headquarters at Winnipeg, Man., succeeding **D. J. England,** who has retired after 43 years of service with the road.

James C. Bailey, general superintendent of the Bessemer & Lake Erie, has been appointed general manager, and **Alton D. Schadt,** assistant to general manager, has been named assistant general manager. Both changes took place at Pittsburgh, Pa., on October 1.

Richard J. Duggan, whose appointment as superintendent of the New York freight terminals of the New York, New Haven & Hartford was announced in a recent issue of *Railway Age,* was born at Brattleboro Vt., on November 22, 1897, and entered railroading with the Central Vermont in 1915 as a clerk at New London, Conn. There he advanced successively to road brakeman in 1917, yard brakeman in

Richard J. Duggan

1918, yard conductor in 1921, and yardmaster in 1925. He went with the New Haven in 1938 as general yardmaster at New London, becoming trainmaster at Worcester, Mass., in 1940, and assistant superintendent at Worcester in 1942. Mr. Duggan was promoted to assistant superintendent of the New York freight terminals at Harlem River, N. Y., in 1945, and maintained that post until his recent advancement there.

Roland L. Tooker, assistant superintendent of passenger service on the Illinois Central, with headquarters at Chicago, has been promoted to superintendent of transportation, with the same headquarters. He is succeeded by **John W. Dodge,** assistant trainmaster at Clinton, Ill.

Gerson Marks, whose appointment as manager, stations & transfers, of the New York, New Haven & Hartford, with headquarters at New Haven, Conn., was announced in a recent issue of *Railway Age,* was born at Dallas, Texas, on May 24, 1882, and entered railroading in 1898 with the Cotton Belt, then went with the Santa Fe as claim clerk at Dallas in 1899. He became chief traveling agent for the St. Louis-San Francisco in 1909, and was later in charge of the merchandise bureau. In 1911, Mr. Marks joined the Texas & Pacific as special representative to operating vice-president at New Orleans, La., then became assistant freight claim agent, in charge of stations and transfers and

Gerson Marks

prevention. He began his service with the New Haven in 1916 as freight claim agent, advancing to assistant to the general manager in 1917. Mr. Marks maintained the latter post until his recent advancement.

A. E. Klaproth, superintendent of transportation of the Pacific Fruit Express Company (owned jointly by the Southern Pacific and Union Pacific), has been promoted to assistant general manager, with headquarters as before at Chicago, succeeding **E. E. Walter,** who has been assigned lighter duties because of ill health.

William S. Carr, whose appointment as superintendent of the Boston division of the New York, New Haven & Hartford was announced in a recent issue of *Railway Age,* has been in railroad service since he was 16, when he worked as a spare block operator for the New York, Susquehanna & Western. He later joined the Erie, and

William S. Carr

then the Canadian Pacific. In July, 1913, he began as operator and towerman for the New Haven, and subsequently advanced through the posts of train dispatcher, assistant trainmaster, and trainmaster, then, in 1934, assistant superintendent at New Haven, Conn. In 1942 he

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Availability

IS HIGHER

with Security Circulators

To help maintain the high standard of performance of Northern Pacific's big 4-6-6-4s, each of them is equipped with eight Security Circulators.

Compared with other locomotives, those with Security Circulators are available for continuous operation for longer periods because they have cleaner flues, longer arch life, and improved combustion, so that boiler maintenance is substantially reduced.

These advantages are in addition to an improved circulation of water over the crown sheet and in side water-legs.

AMERICAN ARCH COMPANY, INC.

NEW YORK • CHICAGO

SECURITY CIRCULATOR DIVISION

entered the armed services to take active command of the 729th Railway Operating Battalion, as lieutenant colonel, emerging as a full colonel in 1946. Mr. Carr was appointed manager dining service of the New Haven on February 1 and held this post until his recent promotion.

Willis L. Morneweck, superintendent of the Bessemer & Lake Erie, has been appointed general superintendent, with headquarters as before at Pittsburgh, Pa. **J. Arthur Loutzenhizer,** assistant superintendent at Pittsburgh, has become superintendent, and **James H. Morneweck,** assistant chief train dispatcher there, succeeds him as assistant superintendent.

P. H. Fox, general superintendent of transportation, Atlantic region, of the Canadian National, with headquarters at Moncton, N. B., has been appointed general superintendent there. **E. A. Robertson,** superintendent of transportation there, Atlantic region, succeeds Mr. Fox as general superintendent of transportation. **G. A. Blakney,** assistant superintendent of transportation, has been named supervisor of transportation at Moncton. The positions of superintendent of transportation and assistant superintendent of transportation have been abolished.

Herbert M. Simms whose appointment as general superintendent of dining service for the New York, New Haven & Hartford, with headquarters at Boston, Mass., was announced in a recent issue of *Railway Age,* was born at Boston on May 2, 1904, and joined the New Haven as a dining car steward in 1939. He left to serve in the United States armed services in 1942, then returned to his former post in April, 1943, and was advanced to restaurant superintendent two months later, with jurisdiction

Herbert M. Simms

over railroad station restaurants and company cafeterias. Mr. Simms maintained the latter position at the time of his recent appointment.

D. A. Thomson, assistant division superintendent of the Northern Pacific, with headquarters at Billings, Mont., has been promoted to superintendent, with headquarters at Fargo, N. D., succeeding **W. D. Pearce,** who has been transferred to Minneapolis. Mr. Pearce succeeds **T. M. Flynn,** who has retired after 55 years of railroad service. Mr. Thomson is succeeded at Billings by **R. W. Davis,** assistant superintendent at Fargo, who in turn is succeeded by **J. T. Stotler,** superintendent iron ore operations, with headquarters at Superior, Wis. Mr. Stotler is succeeded by **A. E. Anderson,** ore dock agent at Superior. **C. C. Price,** assistant superintendent, with headquarters at Minneapolis, has been appointed superintendent of Twin City Terminals, a newly created position. His former position has been abolished.

TRAFFIC

C. L. Shortridge, whose promotion to assistant passenger traffic manager of the Missouri Pacific, with headquarters at Houston, Tex., was reported in the *Railway Age* of September 14, began his railroad carreer with the M. P. in 1917 as a yard clerk at Pleasant Hill, Mo. Later he held positions as ticket clerk on the Kansas City Terminal, traveling passenger agent for the M. P. at San Antonio, Tex., and Dallas, and assistant general agent at the latter city. In 1928 Mr. Shortridge was promoted to general agent, passenger de-

C. L. Shortridge

partment, at Birmingham, Ala., and in 1931 was advanced to district passenger agent at Los Angeles, Cal. In 1936 he was promoted to assistant general passenger agent, with headquarters at Memphis, Tenn., which position he held until his recent appointment.

J. H. Shands has been appointed agricultural agent of the Atlantic Coast Line with headquarters at Jacksonville, Fla.

W. B. Hansen, general agent of the Chicago South Shore & South Bend, with headquarters at New York, has been transferred to Chicago.

Donald L. Behler has been appointed general agent of the Illinois Terminal, with headquarters at Detroit, Mich., succeeding **C. F. Beach,** who has resigned.

V. J. Tannlund has been appointed general agent of the Chicago Great Western, with headquarters at Denver, Colo., succeeding **T. J. Cleary,** who has retired after 55 years of service with the road.

Don Y. Smith, chief aide to general freight traffic manager of the Central of New Jersey, has been appointed chief freight traffic officer, with headquarters at New York, succeeding **Charles L. Ewing,** who has retired after 44 years' service.

Richard D. Johnson, whose appointment as general passenger agent of the New York, New Haven & Hartford, with headquarters at New Haven, Conn., was announced in the September 21 issue of *Railway Age,* was born at Proctor, Vt., on June 12, 1898, and joined the New Haven

Richard D. Johnson

in 1919 after serving in the United States armed forces during World War I. He held various positions including that of traveling passenger agent, then was named district passenger agent at Hartford, Conn., in August, 1943, which post he held until his recent advancement.

R. Harold Pusch, whose appointment as assistant to passenger traffic manager of the New York, New Haven & Hartford, with headquarters at New York, was announced in the *Railway Age* of September 7, was born in New York on July 31, 1883, and entered railroading in 1914 with the New Haven. He went with the New England Steamship Company, a New Haven subsidiary, in 1916, and advanced through

R. Harold Pusch

various clerical positions to traveling passenger agent in 1924, assistant general passenger agent in 1927, and general passenger agent in 1931. Mr. Pusch returned to the New York, New Haven & Hartford in 1934 as assistant general passenger agent, and advanced to general passenger

News Department continued on next left-hand page

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agent later that year. He maintained the latter post until his recent promotion.

R. B. Weaver, general agent, passenger department of the Alton, with headquarters at Chicago, has been promoted to assistant general passenger agent, with the same headquarters.

M. G. Coffey, traveling freight agent of the Chicago, Burlington & Quincy, with headquarters at St. Paul, Minn., has been appointed general agent of the road's fuel traffic department, with headquarters at Chicago.

DeWitt C. Rogers, agent at Macon, Ga., has been appointed to the newly-created post of assistant general freight and passenger agent for the Wrightsville & Tennille, the Wadley Southern, the Louisville & Wadley, and the Sylvania, with headquarters at Dublin, Ga.

ENGINEERING & SIGNALING

J. F. Salmon, whose appointment as bridge engineer of the Canadian National at Toronto, Ont., was announced in the August 17 issue of *Railway Age,* was born at Surrey, England, and educated at Edinburgh, Scotland, and began his railway career with the Intercolonial (now

J. F. Salmon

part of the C. N. R.) as a draftsman at Moncton, N. B., in 1913. In 1920 he became chief structural draftsman at Toronto, Ont., and in 1924, was promoted to designing bridge engineer. Mr. Salmon was appointed assistant engineer in January, 1928, and maintained that post until his recent advancement.

John Hilbert, telephone engineer of the Union Pacific, with headquarters at Denver, Colo., has retired after 37 years of service.

H. McNeil has been appointed assistant engineer of construction of the Canadian National, with headquarters at Toronto, Ont.

J. A. Blalock, assistant division engineer assigned to the Potomac Yard of the Richmond, Fredericksburg & Potomac, at Alexandria, Va., has been transferred to Fredericksburg, Va.

N. Dixon, assistant engineer of the Canadian National, St. Lawrence division at Montreal, Que., has been appointed bridge and building master there, succeeding **T. H. Harrington,** who has retired after long service.

Ernest Elsey, superintendent of communications of the Canadian Pacific at St. John, N. B., has been transferred to Winnipeg, Man., to replace **A. J. Clark,** who has retired. **Donald Leslie,** superintendent of traffic at Winnipeg, has been appointed superintendent of communications at St. John, succeeding Mr. Elsey **A. E. Emery,** inspector of communications at Winnipeg, succeeds Mr. Leslie as superintendent of traffic, with the same headquarters.

MECHANICAL

R. E. Whittaker has been appointed assistant master mechanic of the Illinois Central, with headquarters at Markham, Ill.

H. N. Ricks, acting fuel supervisor of the Texas & Pacific at Dallas, Tex., has been appointed fuel supervisor, with the same headquarters.

L. E. Dix, acting mechanical superintendent of the Texas & Pacific at Dallas, Tex., has been appointed mechanical superintendent, with the same headquarters.

J. W. Mason, assistant master mechanic of the Central of Georgia, has been appointed master mechanic in charge of the Macon Shops at Macon, Ga., succeeding the late **Frank N. Burch,** whose death is reported elsewhere in these columns.

Bruce C. Gunnell, Diesel engineer of the Southern at Washington, D. C., has been appointed chief mechanical engineer there, succeeding **Max R. Brockman,** whose promotion to assistant to vice-president there was announced in the September 28 issue of *Railway Age.*

I. N. Moseley, general boilermaker of the Norfolk & Western, has been appointed research and test engineer, succeeding **H. W. Coddington,** who has retired after 43 years of service. **W. S. Garrett,** general foreman of the locomotive department at Roanoke Shops, has been named general boilermaker to succeed Mr. Moseley. **C. L. Crockett,** chemist, has been appointed chief chemist. All these changes occurred at Roanoke, Va., October 1.

PURCHASES AND STORES

N. C. Galleher, whose retirement as assistant general storekeeper of the Missouri-Kansas-Texas, with headquarters at Denison, Tex., was reported in the *Railway Age* of September 21, was born on April 3, 1878, at Delaware, Ohio, and began his railroad career in 1894 with the Cleveland, Cincinnati, Chicago & St. Louis (now part of the New York Central System). Mr. Galleher joined the St. Louis Southwestern in 1900, and remained with that road at Tyler, Tex., until 1915, when he became traveling storekeeper for the Katy at Parsons, Kan. He was promoted to district storekeeper in 1916, with headquarters at Denison, Tex., and in 1918 was advanced to general storekeeper of the road's Texas lines. He later became assistant general storekeeper of the Katy system, with headquarters as before at Denison. In 1922 he was transferred to Parsons, where he remained until his return to Denison in 1931 as assistant general storekeeper.

H. J. Blum, whose retirement as general storekeeper of the Missouri-Kansas-Texas, with headquarters at Parsons, Kan., was reported in the *Railway Age* of September 21, was born on October 28, 1879, at Galesburg, Ill., and entered railroad service in 1898 with the Chicago, Burlington & Quincy as a crew caller. In 1901 Mr. Blum was made stenographer and clerk, and subsequently held various positions in the road's offices at Chicago, Galesburg and West Burlington, Iowa. He was advanced to storekeeper in 1906 at North St. Louis, Mo., and later became chief clerk to storekeeper at Hannibal, Mo. From 1907 to 1913 he was traveling accountant for the Missouri Pacific at St. Louis, Mo., and for a time was district storekeeper there. Mr. Blum held positions with the Terminal Railroad Association of St. Louis and the St. Louis Southwestern prior to joining the Katy in 1915 as district storekeeper at Sedalia, Mo. He was transferred to Parsons in 1917, and in 1937 was advanced to assistant general storekeeper there. In 1939 he was further advanced to general storekeeper, which position he held until his retirement.

SPECIAL

Dr. Frank R. Hirshfield, associate chief surgeon of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., has been promoted to chief surgeon, succeeding **Dr. A. C. Strachauer,** who has retired.

H. B. Pilcher, whose promotion to superintendent of safety of the Wabash, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of September 14, was born on June 2, 1894, at Moberly, Mo., and began his railroad career with the Wabash in 1916 as a concrete inspector. From 1917 until 1930, Mr. Pilcher held various positions in the road's engineering department, and in the latter year was appointed assistant trainmaster at Stanberry, Mo. In 1931 he was advanced to trainmaster at Moulton, Iowa, and subsequently held that position at Moberly, Montpelier, Ohio and Decatur, Ill. In 1943 he entered military service, serving as a lieutenant colonel and commanding officer of the 726th railway operating battalion. Following two years overseas, he returned to the Wabash in 1946, and was made assistant superintendent of safety, which position he held at the time of his recent promotion.

OBITUARY

Frank N. Burch, master mechanic in charge of the Central of Georgia shops at Macon, Ga., died in that city on September 16, following a short illness. He was 59 years old and had served the Central of Georgia for 33 years.

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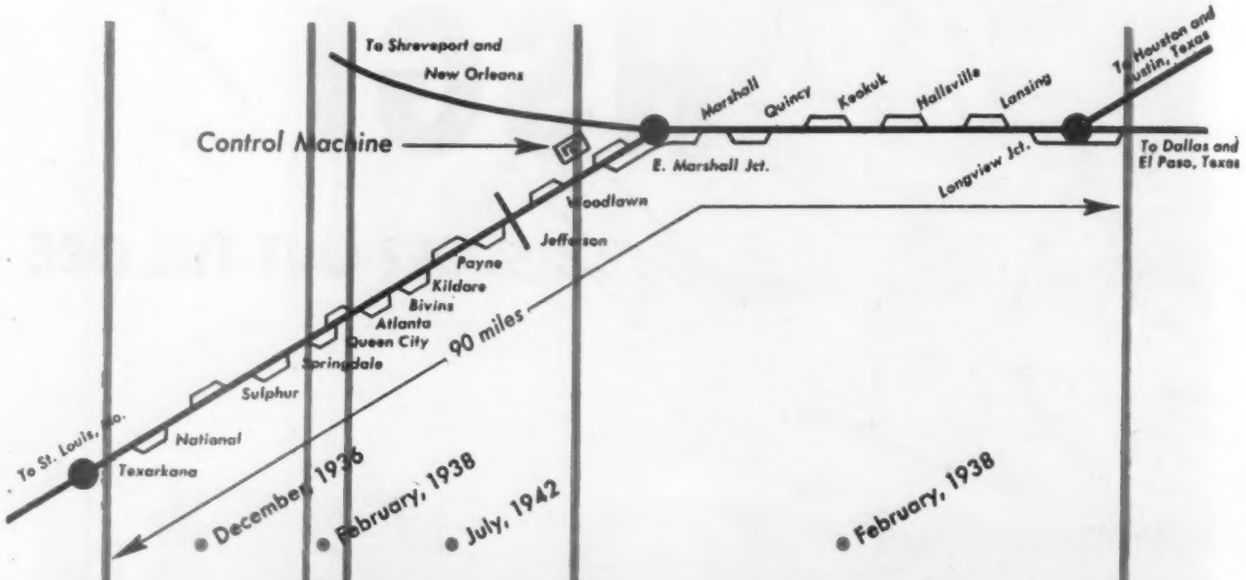
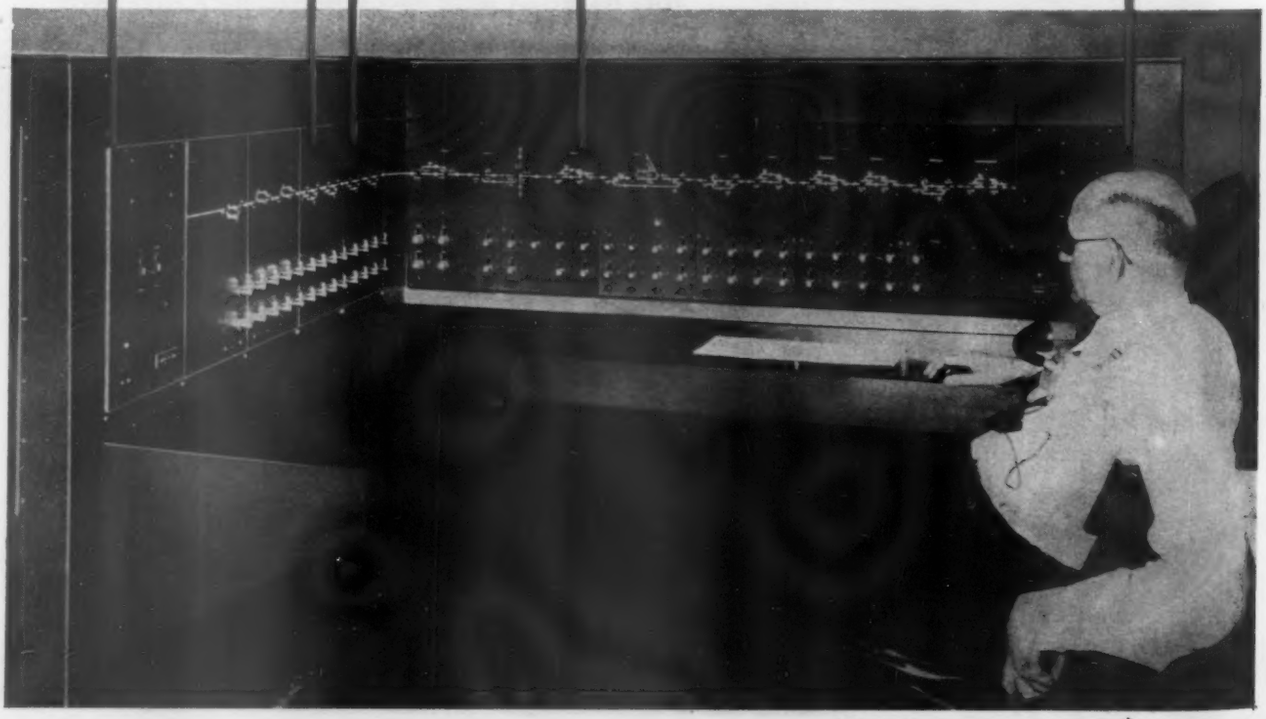


Spread-The-Cost Plan Facilitates Large-Scale CTC Installation



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• Starting in 1938, the Texas and Pacific began to install G-R-S CTC on the 89.7-mile section of single track between Texarkana and Longview, Texas. It made the total installation in four separate units, budgeting the total investment over six years.

Installations were made according to their urgency. The first section, placed in operation in December 1936, covered the 20.4 miles between Texarkana and Springdale. The adjoining section between Springdale and Atlanta was completed two years later. At the same time, a third unit became active on the other end of the section between Longview and East Marshall. G-R-S CTC bridged the remaining gap between East Marshall and Atlanta in July 1942.

The results? Sixty trains now run daily on a track originally designed for 32. Six to eight minutes are saved getting trains in and out of sidings. And average train times are maintained despite the increase in traffic. "Without centralized traffic control," an operating official of the railroad says, "we would be snowed under."

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News Department

(*Continued from page 574*)

Railway "Fan" Trips Resumed

The Connecticut Valley chapter of the National Railway Historical Society will conduct an excursion on Sunday, October 13, on the New York, New Haven & Hartford. The trip will be from New Haven, Conn., to Northampton, Mass., with a side trip to Williamsburgh, Mass., and return to New Haven. This is the "Canal Line" trip operated by the New Haven for railroad fans in 1940. The territory to be covered is 84 miles of branch line which has no passenger service.

On Sunday, October 20, the New York division of the Electric Railroaders' Association will conduct a railroad inspection trip on New Jersey lines of the Pennsylvania not generally traveled by passenger trains. It will include a visit to the freight terminal at Harsimus Cove, the engine servicing facilities at Meadows enginehouse, the yard at Waverly, then run south over the line of the Camden & Amboy to Jamesburg, east to Monmouth Junction and back to Pennsylvania station, New York.

Grand Central Terminal Handles Record Passenger Throng

A new record in railroad passenger traffic through Grand Central terminal, New York, for one month was set in August, when a total of 5,698,437 passengers entered or left that station by railroad. At the same time the New York Central also set a new record with 3,140,521 incoming and outgoing passengers at Grand Central. This exceeded the previous high of 3,076,011, recorded in January, 1946. The New York, New Haven & Hartford carried 2,557,916 passengers into and out of the terminal during August.

Katy-Frisco Train Quickened

One hour has been slashed from the running time of the northbound "Bluebonnet", Texas to St. Louis, Mo., passenger train of the Missouri-Kansas-Texas and St. Louis-San Francisco. Under the new schedule, which became effective September 15, the train leaves Ft. Worth at 5:45 p. m., 1 hr. later than before, while the Dallas section leaves at 6 p. m., 1 hr. 10 min. later than previously. The arrival time at St. Louis remains 11:35 a. m.

Colorado's Narrow Gage Railroads

Lucius Beebe, well-known columnist and author of railroad books, has written an interesting history of the narrow gage railroads of Colorado, which has been issued as Bulletin No. 67A of the Railway & Locomotive Historical Society. He describes the beginnings and subsequent operations of the Rio Grande and the Rio Grande Southern, and current narrow-gage operations of the Denver & Rio Grande Western. His text is accompanied by numerous illustrations which add considerably to the story. The material and photographs were gathered by Mr. Beebe and his photographic associate, Charles M. Clegg, Jr., during trips in and around Durango. Copies are available from the society, Baker Library, Harvard Business School, Boston, Mass. Price for members is $1.00, for non-members, $2.00.

Westchester Model Club Schedules Exhibit

An exhibition of model railroading will be held by the Westchester Model Club in the Pelham Manor, N. Y., station of the New York, New Haven & Hartford, the first three weekends in November. The exhibit will be open to the public on Friday evenings, Saturday afternoons and evenings, and on Sunday afternoono and evenings.

Annual Meeting of Army Transportation Association

Secretary of War Robert P. Patterson will be the principal speaker at the national convention of the Army Transportation Association to be held in Chicago November 13 and 14, Colonel Edmund C. R. Lasher, national president of the association, has announced. Other speakers—leaders in civilian and military transportation—will discuss important transportation problems during the two-day gathering. The annual meeting of the association's board of directors also will be held.

The association was formed two years ago to foster a close relationship between army and civilian transportation people for the betterment of the nation's transportation services. By cooperation between civilian and military transportation leaders and the interchange of ideas and information, the association seeks the development of an alert national defense program as it pertains to transportation. Chairman of the committee arranging the Chicago convention is Colonel Harry J. Dooley, LaSalle Hotel, Chicago.

New Head for Transportation Corps Technical Office

Announcement has been made of the appointment of Lieutenant Colonel Floyd H. Long as chief of the office of technical information of the Army Transportation Corps, with offices in the Pentagon, Washington, D. C., succeeding Lieutenant Colonel Russell F. Oakes, who has left the service after having been head of the technical information office about four years. Colonel Long, who entered the service as a reserve officer in 1940, has been integrated into the regular army.

Monon Restores Train Chicago to Louisville, French Lick

Overnight between Chicago, French Lick, Ind., and Louisville, Ky., was reinstated September 29 by the Chicago, Indianapolis & Louisville. The new train, which includes sleeping cars to both cities, leaves Chicago at 11:20 p. m., arriving at French Lick at 7:45 a. m., and Louisville at 7:50 a. m. The return train departs from Louisville at 11:05 p. m., and French Lick at 9:30 p. m., with arrival at Chicago at 7:50 a. m.

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Freight Operating Statistics of Large Steam Railways—Selected

Region, road, and year		Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: Per cent B. O.	
New England Region:													
Boston & Albany	1946	362	148,118	162,924	18,416	3,603	68.0	218,907	91,207	58	..	30	34.1
	1945	362	169,310	190,535	27,923	3,869	62.0	258,930	108,115	71	..	19	21.1
Boston & Maine	1946	1,750	290,195	303,049	13,384	11,417	74.2	665,666	290,868	98	18	18	13.4
	1945	1,777	333,887	348,645	16,441	12,851	68.7	818,037	367,526	131	21	17	10.1
N. Y., New H. & Hartf.†	1946	1,820	372,985	526,744	37,559	15,122	72.3	849,715	358,897	198	16	55	23.2
	1945	1,815	452,065	618,053	50,845	18,071	70.5	1,085,903	484,113	216	24	33	15.1
Great Lakes Region:													
Delaware & Hudson	1946	846	262,191	317,603	33,141	11,498	68.8	786,585	404,720	115	74	26	12.1
	1945	846	291,813	359,249	38,217	12,978	68.5	911,121	482,358	131	60	28	12.8
Del., Lack. & Western	1946	971	296,822	338,729	42,800	13,835	72.0	858,112	387,616	110	28	31	18.3
	1945	971	377,287	424,884	52,576	15,985	70.8	1,046,192	502,430	135	38	34	16.4
Erie	1946	2,242	702,585	749,596	59,881	35,977	68.9	2,271,649	959,528	270	50	69	17.7
	1945	2,243	875,243	935,277	64,194	43,171	67.8	2,801,721	1,253,003	294	30	60	15.6
Grand Trunk Western	1946	972	254,226	261,745	2,118	8,764	69.6	541,210	229,510	69	2	7	9.0
	1945	1,026	266,119	271,203	1,825	8,606	69.7	539,532	243,780	65	1	12	15.4
Lehigh Valley	1946	1,242	289,314	321,709	48,373	13,875	73.7	892,914	444,037	106	25	38	22.5
	1945	1,247	412,370	455,712	60,667	19,184	67.0	1,328,462	666,084	135	26	8	4.7
New York Central	1946	10,328	2,922,336	3,150,826	239,306	120,337	66.0	7,856,939	3,559,009	976	70	347	24.9
	1945	10,331	3,425,428	3,698,637	232,451	133,699	66.2	9,102,860	4,347,471	1,088	45	263	18.8
New York, Chi. & St. L.	1946	1,656	513,675	521,354	6,879	23,608	72.9	1,407,273	613,062	123	28	30	16.6
	1945	1,656	710,258	725,481	9,923	29,416	69.5	1,877,635	856,262	164	18	18	9.0
Pere Marquette	1946	1,915	328,150	336,709	7,809	11,851	70.2	755,214	341,097	126	15	23	14.0
	1945	1,915	455,731	471,370	12,057	16,249	66.6	1,088,991	512,811	141	2	22	13.3
Pitts. & Lake Erie	1946	229	88,886	89,702	59	3,824	68.4	319,891	192,899	27	6	18	35.3
	1945	229	97,228	98,243	376	4,350	67.4	359,207	212,809	32	..	15	31.9
Wabash	1946	2,381	638,155	658,304	16,746	23,464	72.9	1,429,317	606,225	157	16	34	16.4
	1945	2,381	740,821	767,831	17,066	27,159	71.7	1,743,880	811,353	177	..	35	16.5
Central Eastern Region:													
Baltimore & Ohio	1946	6,103	1,913,795	2,385,971	253,849	69,531	66.8	4,859,885	2,429,836	794	32	340	29.2
	1945	6,095	2,385,938	2,968,501	321,140	86,694	66.3	6,245,798	3,200,589	923	5	236	20.3
Central of New Jersey†	1946	649	156,940	183,153	53,112	6,936	71.5	430,232	222,898	94	3	55	36.2
	1945	654	213,770	246,667	52,906	8,500	66.1	590,540	302,110	106	17	25	16.9
Chicago & Eastern Ill.	1946	910	163,368	166,206	4,240	5,451	70.8	363,335	180,765	52	6	20	25.6
	1945	912	270,253	273,690	7,286	7,947	62.0	562,285	261,729	72	1	7	8.8
Elgin, Joliet & Eastern	1946	392	101,120	104,942	2,698	3,142	68.9	236,318	127,981	40	5	20	30.8
	1945	392	124,032	128,661	3,704	3,663	67.1	279,018	150,755	56	2	18	23.7
Long Island	1946	372	31,938	33,789	15,094	386	58.4	26,266	11,550	33	..	2	5.7
	1945	372	31,487	32,958	15,031	369	56.8	26,711	11,770	45	..	3	6.3
Pennsylvania System	1946	10,033	3,954,148	4,611,045	598,202	164,179	67.3	11,228,299	5,417,775	1,861	81	297	13.3
	1945	10,024	4,491,096	5,225,854	683,420	178,417	66.1	12,531,630	6,256,052	2,046	..	198	8.8
Reading	1946	1,361	489,087	543,252	62,460	16,487	64.8	1,259,165	683,802	253	14	57	17.6
	1945	1,365	540,053	604,063	73,015	19,062	68.0	1,420,934	789,049	252	34	48	14.4
Pocahontas Region:													
Chesapeake & Ohio	1946	3,063	1,165,673	1,256,840	61,896	58,145	59.2	4,880,829	2,838,587	463	1	62	11.8
	1945	3,038	1,115,236	1,191,505	56,920	53,717	59.0	4,530,252	2,622,051	438	20	82	15.2
Norfolk & Western	1946	2,139	740,986	795,333	57,801	36,205	60.0	3,111,702	1,713,937	249	58	35	10.2
	1945	2,139	727,804	779,372	56,221	35,267	60.4	2,997,489	1,637,997	259	29	14	4.6
Southern Region:													
Atlantic Coast Line	1946	5,552	1,013,492	1,036,070	15,072	27,828	68.7	1,738,501	779,326	387	29	31	6.9
	1945	5,557	1,118,227	1,134,155	14,673	29,939	67.6	1,936,066	886,742	423	5	36	7.8
Central of Georgia†	1946	1,783	301,656	306,646	5,818	7,692	72.7	485,935	222,608	91	..	8	8.1
	1945	1,783	326,046	336,270	6,377	8,042	73.4	502,293	230,322	100	..	8	7.4
Gulf, Mobile & Ohio	1946	1,931	288,894	337,249	2,968	10,584	79.0	652,914	325,387	107	17	8	6.1
	1945	1,931	306,394	392,092	2,024	11,424	76.8	701,584	337,802	100	5	12	10.3
Illinois Central (incl. Yazoo & Miss. Vy.)	1946	6,601	1,418,978	1,431,629	50,728	54,590	66.5	3,700,644	1,761,229	598	12	98	13.8
	1945	6,605	1,698,377	1,726,620	28,962	64,292	62.3	4,473,278	2,051,561	643	..	62	8.8
Louisville & Nashville	1946	4,750	1,454,381	1,584,903	43,179	39,025	65.6	2,713,452	1,379,050	394	27	72	14.6
	1945	4,746	1,613,526	1,750,265	46,461	43,343	64.4	3,045,102	1,528,815	419	8	64	13.0
Seaboard Air Line*	1946	4,139	868,874	915,537	15,135	24,758	69.0	1,586,919	697,699	270	5	57	17.2
	1945	4,157	872,707	927,301	16,628	25,076	70.6	1,578,456	711,580	282	4	52	15.4
Southern	1946	6,450	2,060,602	2,099,756	36,225	50,157	72.2	3,044,480	1,392,834	613	4	109	15.0
	1945	6,471	2,037,202	2,068,083	37,215	48,387	72.7	2,945,838	1,361,873	629	..	85	11.9
Northwestern Region:													
Chi. & North Western†	1946	8,062	974,941	1,015,662	22,395	31,714	68.3	2,118,872	903,849	355	13	133	26.5
	1945	8,062	1,035,371	1,069,555	25,604	35,019	71.4	2,331,642	1,103,098	350	13	105	22.4
Chicago Great Western	1946	1,445	222,933	226,068	8,227	7,134	71.6	448,339	195,181	65	2	12	15.2
	1945	1,445	271,607	277,226	6,078	8,962	75.3	562,241	258,508	74	..	9	10.8
Chi., Mil., St. P. & Pac.	1946	10,725	1,285,537	1,368,550	55,263	44,614	66.2	2,971,791	1,350,377	442	78	74	12.5
	1945	10,723	1,538,965	1,647,205	84,938	56,538	68.5	3,794,801	1,829,169	502	42	62	10.2
Chi., St. P., Minneap. & Om.	1946	1,606	183,812	192,247	10,962	4,917	70.9	317,831	139,342	82	3	34	28.6
	1945	1,606	197,419	215,573	12,480	5,670	73.6	373,180	179,117	86	15	26	20.5
Duluth, Missabe & I. R.	1946	546	134,768	135,195	916	7,434	51.5	688,941	423,003	47	..	1	2.1
	1945	546	166,291	167,042	1,051	8,946	51.1	831,064	511,201	48	..	2	4.0
Great Northern	1946	8,236	954,630	955,955	44,980	36,524	61.8	2,716,894	1,309,678	342	71	79	16.1
	1945	8,276	1,267,208	1,269,423	61,428	53,517	66.2	3,889,229	1,958,624	398	23	46	9.9
Min., St. P. & S. St. M.†	1946	4,181	426,203	436,814	7,165	12,072	67.2	813,635	387,562	126	..	12	8.7
	1945	4,259	451,693	462,974	7,593	13,215	69.1	911,928	455,770	133	2	13	8.8
Northern Pacific	1946	6,576	832,713	887,744	55,165	29,498	65.6	2,068,091	962,473	332	41	65	14.8
	1945	6,577	989,162	1,054,782	77,350	43,287	74.7	2,896,939	1,471,551	379	12	51	11.5
Central Western Region:													
Alton†	1946	915	192,354	194,966	322	5,427	70.2	356,596	151,481	63	21	19	18.4
	1945	915	280,873	301,446	652	7,839	70.1	514,064	247,279	75	..	6	7.4
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1946	13,085	3,008,108	3,194,775	196,564	111,106	66.7	7,357,577	2,826,231	792	43	146	14.9
	1945	13,115	3,938,983	4,165,720	213,986	144,109	62.2	10,080,048	4,019,915	917	2	102	10.0
Chi., Burl. & Quincy	1946	8,671	1,135,053	1,175,057	41,254	43,534	68.4	2,872,737	1,332,174	394	67	75	14.0
	1945	8,768	1,389,464	1,468,873	51,516	55,833	71.1	3,726,102	1,826,428	427	..	77	15.3
Chi., Rock I. & Pac.†	1946	7,615	1,268,518	1,305,344	16,698	40,844	63.6	2,698,605	1,125,886	358	7	88	19.4
	1945	7,716	1,501,964	1,572,182	22,516	47,078	68.5	3,097,310	1,420,364	395	..	65	14.1
Denver & R. G. Wn.†	1946	2,386	314,986	347,314	39,377	10,069	78.1	628,002	307,235	132	38	41	19.4
	1945	2,386	497,551	568,562	118,582	18,614	79.5	1,158,739	587,294	186	7	28	12.7
Southern Pacific—Pac. Lines	1946	8,171	2,349,980	2,653,889	445,475	94,411	67.9	6,156,321	2,419,125	778	4	194	19.9
	1945	8,179	2,390,865	2,720,685	410,353	105,706	68.6	6,923,559	2,851,924	790	2	151	16.0
Union Pacific	1946	9,775	2,189,174	2,288,281	172,568	84,197	70.7	5,304,704	2,230,275	612	143	124	14.1
	1945	9,781	3,217,165	3,427,997	298,732	123,419	70.2	7,945,076	3,620,654	842	17	61	6.6
Southwestern Region:													
Mo.-Kans.-Texas Lines	1946	3,241	571,386	591,312	10,022	16,446	67.2	1,055,499	467,620	121	..	47	28.0
	1945	3,241	801,584	833,033	14,170	22,103	61.3	1,523,863	676,528	152	..	17	10.1
Missouri Pacific†	1946	7,053	1,331,526	1,387,735	33,110	46,275	69.1	2,982,412	1,336,580	435	..	65	13.0
	1945	7,056	1,655,014	1,751,601	41,383	60,320	67.3	3,979,702	1,847,744	475	..	66	12.2
Texas & Pacific	1946	1,871	433,435	433,435	8,696	13,721	67.1	908,675	364,311	111	37	6	3.9
	1945	1,871	493,894	493,894	8,251	17,214	69.7	1,108,297	473,689	132	9	19	11.9
St. Louis-San Francisco†	1946	4,615	900,090	954,723	10,644	22,738	71.3	1,446,990	666,817	304	11	27	7.6
	1945	4,615	1,104,383	1,181,945	16,942	28,274	68.2	1,868,067	877,427	317	..	29	8.4
St. Louis-San Fran. & Texas	1946	156	43,307	46,251	6	798	70.8	54,574	25,200	9	..	1	10.0
	1945	161	34,983	36,992	..	575	68.2	38,314	16,083	7	..	1	12.5
St. Louis Southw. Lines†	1946	1,568	366,026	368,954	4,924	14,880	79.7	811,427	362,719	89	29	18	13.2
	1945	1,600	483,774	490,881	6,530	17,518	68.8	1,089,390	486,972	114	3	24	17.0
Texas & New Orleans	1946	4,321	920,442	922,674	14,270	26,312	75.2	1,606,455	714,060	221	2	42	15.8
	1945	4,325	1,138,334	1,139,531	43,693	29,292	65.8	1,957,604	855,587	244	..	35	12.5

† Report of trustee or trustees. * Report of receivers.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Items for the Month of June 1946 Compared with June 1945

Region, road, and year		Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl.locos. and tenders	G.t.m. per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:														
Boston & Albany	1946	306	5,175	5,481	0.7	22,565	1,487	619	25.3	539	31.3	8,398	183	76.9
	1945	253	5,593	5,846	0.5	23,843	1,535	641	27.9	616	35.5	9,955	182	88.2
Boston & Maine	1946	1,988	11,348	13,336	2.7	34,070	2,297	1,004	25.5	761	40.2	5,540	102	83.1
	1945	1,856	10,817	12,673	2.3	38,094	2,456	1,103	28.6	956	48.6	6,894	102	78.5
N. Y., New H. & Hartf.†	1946	2,538	19,633	22,171	3.3	31,716	2,286	966	23.7	560	32.6	6,573	87	76.8
	1945	1,869	19,419	21,288	4.2	33,745	2,410	1,074	26.8	754	39.9	8,891	85	87.9
Great Lakes Region:														
Delaware & Hudson	1946	3,648	6,637	10,285	6.1	53,252	3,014	1,551	35.2	1,426	58.9	15,946	99	55.6
	1945	3,966	7,192	11,158	3.4	52,892	3,140	1,663	37.2	1,529	60.0	19,005	101	64.2
Del., Lack. & Western	1946	5,073	12,959	18,032	4.4	43,113	2,935	1,326	28.0	689	34.1	13,306	110	83.4
	1945	4,761	12,902	17,663	2.7	43,374	2,804	1,347	31.4	942	42.3	17,248	109	83.3
Erie	1946	9,048	25,881	34,929	4.0	49,975	3,255	1,375	26.7	918	50.0	14,266	93	75.5
	1945	7,728	30,594	38,322	2.8	53,133	3,220	1,440	29.0	1,091	55.4	18,621	90	93.9
Grand Trunk Western	1946	4,207	9,266	13,473	8.9	42,984	2,142	908	26.2	567	31.1	7,871	83	122.8
	1945	1,830	7,761	9,591	5.1	41,928	2,037	921	28.3	791	40.1	7,920	82	124.1
Lehigh Valley	1946	7,152	13,568	20,720	6.8	51,850	3,176	1,579	32.0	784	33.3	11,917	100	77.2
	1945	5,461	19,980	25,441	2.2	55,233	3,319	1,664	34.7	881	37.9	17,805	92	107.3
New York Central	1946	55,764	103,826	159,590	4.6	41,980	2,732	1,237	29.6	753	38.6	11,487	99	89.0
	1945	41,503	96,283	137,786	4.2	43,113	2,691	1,285	32.5	1,042	48.4	14,027	98	103.6
New York, Chi. & St. L.	1946	2,649	12,186	14,835	3.5	51,388	2,755	1,200	26.0	1,358	71.8	12,340	82	102.3
	1945	2,094	13,328	15,422	2.4	50,849	2,651	1,209	29.1	1,804	89.2	17,236	83	130.3
Pere Marquette	1946	4,770	11,992	16,762	4.5	34,684	2,314	1,045	28.8	711	35.2	5,937	84	75.1
	1945	2,977	8,860	11,837	2.7	42,984	2,411	1,135	31.6	1,320	62.8	8,926	85	103.4
Pitts. & Lake Erie	1946	3,573	9,733	13,306	6.4	55,730	3,601	2,171	50.4	436	12.6	28,078	84	64.6
	1945	3,956	9,847	13,803	6.7	53,090	3,696	2,190	48.9	505	15.3	30,977	89	76.3
Wabash	1946	5,671	15,910	21,581	3.0	44,831	2,262	959	25.8	979	51.9	8,487	102	112.6
	1945	5,565	12,564	18,129	4.4	44,886	2,375	1,105	29.9	1,444	67.4	11,359	104	128.7
Central Eastern Region:														
Baltimore & Ohio	1946	35,783	45,805	81,588	6.1	32,732	2,601	1,301	34.9	950	40.7	13,271	141	78.0
	1945	37,752	56,186	93,938	4.6	32,642	2,673	1,370	36.9	1,180	48.2	17,504	137	96.6
Central of New Jersey†	1946	4,711	11,409	16,120	6.9	32,138	2,833	1,468	32.1	466	20.3	11,448	117	65.9
	1945	3,818	14,756	18,574	5.7	33,929	2,839	1,452	35.5	539	22.9	15,398	109	84.9
Chicago & Eastern Ill.	1946	1,924	3,909	5,833	6.2	38,801	2,289	1,139	33.2	928	39.5	6,621	105	75.3
	1945	2,585	4,810	7,395	4.5	38,693	2,126	990	32.9	1,187	58.2	9,566	111	118.8
Elgin, Joliet & Eastern	1946	7,461	10,434	17,895	2.7	20,188	2,502	1,355	40.7	250	8.9	10,883	122	74.7
	1945	8,157	6,095	14,252	2.4	19,279	2,371	1,281	41.2	345	12.5	12,819	129	82.1
Long Island	1946	48	5,386	5,434	.2	6,712	841	370	29.9	78	4.5	1,035	346	70.9
	1945	36	5,396	5,432	.5	6,159	859	378	31.9	74	4.1	1,055	297	49.7
Pennsylvania System	1946	126,854	125,532	252,386	7.8	39,020	2,939	1,418	33.0	723	32.6	18,000	116	83.7
	1945	114,618	122,180	236,798	5.0	39,976	2,884	1,440	35.1	885	38.1	20,804	117	95.1
Reading	1946	11,880	21,949	33,829	2.8	34,136	2,579	1,401	41.5	676	25.1	16,748	106	71.5
	1945	10,821	21,426	32,247	2.8	35,389	2,633	1,462	41.4	779	27.7	19,269	106	77.3
Pocahontas Region:														
Chesapeake & Ohio	1946	35,680	23,451	59,131	1.6	61,807	4,287	2,493	48.8	1,546	53.5	30,891	69	89.4
	1945	37,708	19,021	56,729	1.6	60,045	4,114	2,381	48.8	1,540	53.4	28,769	72	84.4
Norfolk & Western	1946	25,473	8,526	33,999	1.8	66,467	4,260	2,346	47.3	1,587	55.9	26,709	82	90.1
	1945	29,041	7,213	36,254	2.0	66,362	4,167	2,277	46.4	1,477	52.6	25,526	82	98.1
Southern Region:														
Atlantic Coast Line	1946	8,536	20,203	28,739	3.2	27,506	1,732	776	28.0	853	44.3	4,679	112	84.2
	1945	6,725	16,568	23,293	2.0	29,109	1,742	798	29.6	1,183	59.1	5,319	116	88.2
Central of Georgia†	1946	1,846	6,494	8,340	1.6	29,882	1,615	740	28.9	893	42.4	4,162	128	110.3
	1945	1,835	7,155	8,990	1.2	28,828	1,548	710	28.6	828	39.4	4,306	131	114.7
Gulf, Mobile & Ohio	1946	1,616	6,346	7,962	1.3	41,170	2,271	1,132	30.7	1,348	55.5	5,617	96	93.0
	1945	1,492	7,971	9,463	.9	40,747	2,298	1,106	29.6	1,200	52.9	5,831	107	118.5
Illinois Central (incl. Yazoo & Miss. Vy.)	1946	11,083	35,201	46,284	1.5	45,080	2,673	1,272	32.3	1,198	55.8	8,894	111	74.6
	1945	18,255	37,470	55,725	.9	44,459	2,714	1,245	31.9	1,205	60.6	10,354	108	86.3
Louisville & Nashville	1946	24,988	14,737	39,725	4.6	29,570	1,867	949	35.3	1,015	43.8	9,678	119	114.6
	1945	27,302	17,821	45,123	6.2	30,190	1,887	948	35.3	1,112	48.9	10,738	125	128.9
Seaboard Air Line*	1946	5,843	18,521	24,364	2.1	32,969	1,883	828	28.2	933	48.0	5,619	114	102.4
	1945	4,883	16,666	21,549	1.9	32,730	1,867	842	28.4	1,069	53.4	5,706	119	102.7
Southern	1946	15,028	34,027	49,055	5.0	25,907	1,503	687	27.8	939	47.1	7,198	137	102.5
	1945	13,608	30,406	44,014	3.5	25,300	1,464	677	28.1	1,023	50.0	7,015	140	103.8
Northwestern Region:														
Chi. & North Western†	1946	19,732	34,487	54,219	3.2	34,584	2,258	963	28.5	566	29.1	3,737	123	74.2
	1945	19,223	31,410	50,633	4.1	36,185	2,326	1,101	31.5	736	32.7	4,561	117	84.2
Chicago Great Western	1946	1,108	4,173	5,281	5.2	35,013	2,015	877	27.4	1,175	60.0	4,502	121	103.9
	1945	928	4,442	5,370	2.5	35,789	2,086	959	28.8	1,633	75.2	5,963	117	122.3
Chi., Mil., St. P. & Pac.	1946	22,787	35,700	58,487	1.5	37,274	2,334	1,061	30.3	785	39.2	4,197	111	85.4
	1945	20,292	32,654	52,946	1.7	39,352	2,484	1,197	32.4	1,146	51.7	5,686	112	102.3
Chi., St. P., Minneap. & Om.	1946	1,154	7,243	8,397	5.8	23,210	1,760	771	28.3	565	28.1	2,892	115	61.0
	1945	819	6,295	7,114	7.5	26,192	1,910	917	31.6	832	35.8	3,718	102	63.4
Duluth, Missabe & I. R.	1946	14,252	373	14,625	2.2	88,553	5,240	3,217	56.9	951	32.4	25,824	63	108.0
	1945	14,774	448	15,222	2.7	89,874	5,184	3,189	57.1	1,121	38.4	31,209	59	125.8
Great Northern	1946	22,207	19,361	41,568	3.9	46,799	2,869	1,383	35.9	1,018	45.9	5,301	89	72.4
	1945	20,402	28,792	49,194	2.1	48,149	3,100	1,561	36.6	1,389	57.4	7,889	87	100.3
Min., St. P. & S. St. M.†	1946	6,112	9,001	15,113	3.1	33,312	1,929	919	32.1	844	39.1	3,090	91	107.1
	1945	5,670	6,791	12,461	3.8	35,155	2,042	1,021	34.5	1,203	50.4	3,567	87	110.9
Northern Pacific	1946	16,722	18,144	34,866	4.8	41,485	2,502	1,165	32.6	941	43.9	4,879	131	77.9
	1945	15,722	24,022	39,744	3.6	44,607	2,957	1,502	34.0	1,282	50.5	7,458	124	91.4
Central Western Region:														
Alton†	1946	1,663	5,856	7,519	1.4	30,807	1,889	802	27.9	684	34.9	5,518	100	71.2
	1945	1,582	7,532	9,114	3.0	38,386	1,856	893	31.5	917	41.4	9,008	123	132.9
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1946	40,886	41,744	82,630	4.7	47,479	2,460	945	25.4	1,151	67.8	7,200	101	121.4
	1945	39,784	72,426	112,210	3.2	43,947	2,575	1,027	27.9	1,251	72.1	10,217	105	150.8
Chi., Burl. & Quincy	1946	15,614	26,147	41,761	2.8	42,719	2,541	1,178	30.6	1,063	50.8	5,121	100	79.7
	1945	16,430	26,817	43,247	2.1	43,038	2,700	1,324	32.7	1,361	58.5	6,944	99	106.3
Chi., Rock I. & Pac.†	1946	9,964	28,102	38,066	4.1	38,094	2,146	895	27.6	1,009	57.5	4,928	99	100.7
	1945	9,319	25,795	35,114	3.1	35,906	2,080	954	30.2	1,344	65.1	6,136	105	120.7
Denver & R. G. Wn.†	1946	6,838	4,746	11,584	5.9	35,976	2,006	981	30.5	896	37.6	4,292	158	65.8
	1945	7,860	10,588	18,448	4.7	35,880	2,371	1,202	31.6	1,197	47.7	8,205	161	107.4
Southern Pacific—Pac. Lines	1946	23,313	50,008	73,321	3.1	39,798	2,645	1,039	25.6	1,113	63.9	9,869	99	113.1
	1945	23,102	66,345	89,447	2.5	39,462	2,918	1,202	27.0	1,088	58.8	11,623	96	117.1
Union Pacific	1946	26,567	30,685	57,252	3.8	49,513	2,467	1,037	26.5	1,312	70.1	7,605	122	95.5
	1945	26,558	51,387	77,945	3.5	48,335	2,509	1,143	29.3	1,614	78.4	12,339	123	139.6
Southwestern Region:														
Mo.-Kans.-Texas Lines	1946	1,635	10,913	12,548	1.0	35,485	1,868	827	28.4	1,301	68.1	4,809	77	128.0
	1945	1,166	9,337	10,503	.2	33,089	1,915	850	30.6	2,039	108.8	6,958	83	174.8
Missouri Pacific†	1946	14,686	27,707	42,393	1.4	39,311	2,255	1,011	28.9	1,053	52.7	6,317	102	99.9
	1945	12,429	27,515	39,944	1.7	40,310	2,424	1,125	30.6	1,556	75.4	8,729	103	117.9
Texas & Pacific	1946	1,169	6,759	7,928	1.9	42,850	2,145	860	26.6	1,572	88.3	6,490	88	99.5
	1945	1,385	9,302	10,687	2.0	38,575	2,273	971	27.5	1,528	79.6	8,439	90	116.5
St. Louis-San Francisco†	1946	4,302	14,342	18,644	1.9	31,815	1,618	746	29.3	1,146	54.8	4,816	122	99.6
	1945	5,838	15,246	21,084	1.8	32,547	1,707	802	31.0	1,417	66.9	6,338	124	121.2
St. Louis-San Fran. & Texas	1946	....	308	308	2.3	23,503	1,263	583	31.6	2,157	96.4	5,385	111	164.4
	1945	....	417	417	2.2	18,986	1,113	467	28.0	1,290	67.6	3,330	121	147.0
St. Louis Southw. Lines†	1946	1,127	6,452	7,579	2.2	41,930	2,222	993	24.4	1,615	83.1	7,711	79	98.5
	1945	901	7,204	8,105	1.6	36,335	2,257	1,009	27.8	1,921	100.4	10,145	79	126.8
Texas & New Orleans	1946	3,377	17,999	21,376	3.5	32,764	1,763	784	27.1	1,117	54.7	5,508	87	123.6
	1945	3,489	19,633	23,122	3.6	30,557	1,740	760	29.2	1,183	61.5	6,594	91	144.8

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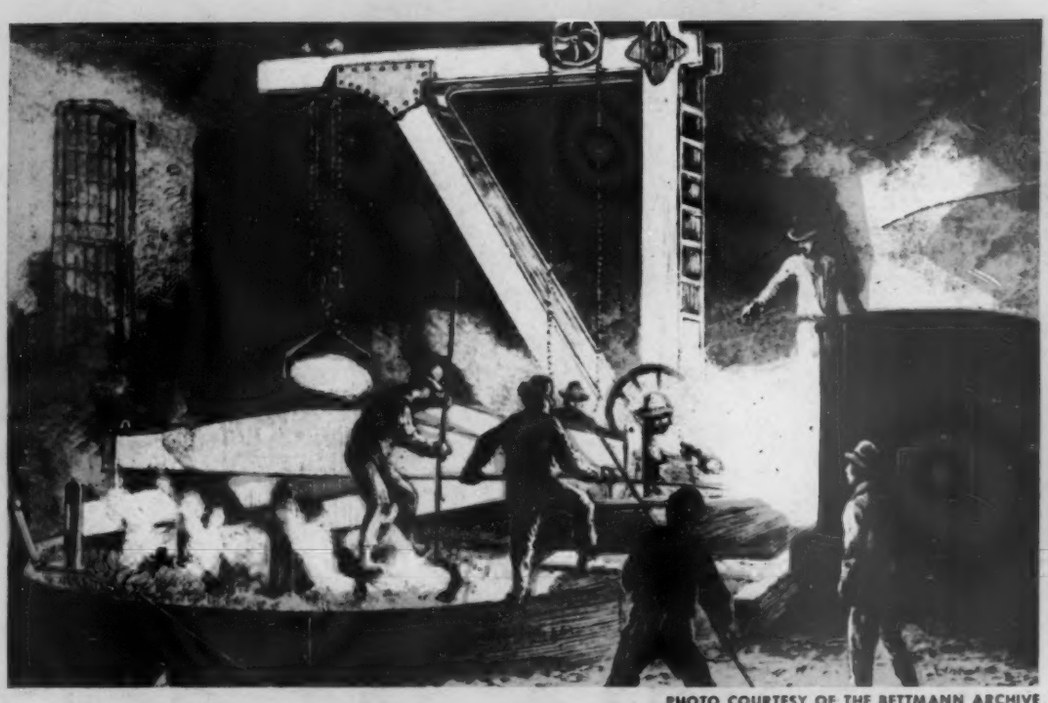

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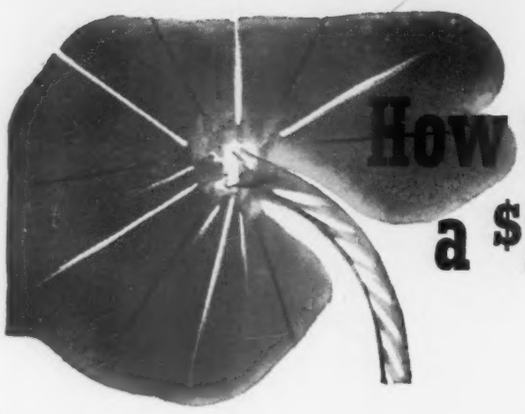
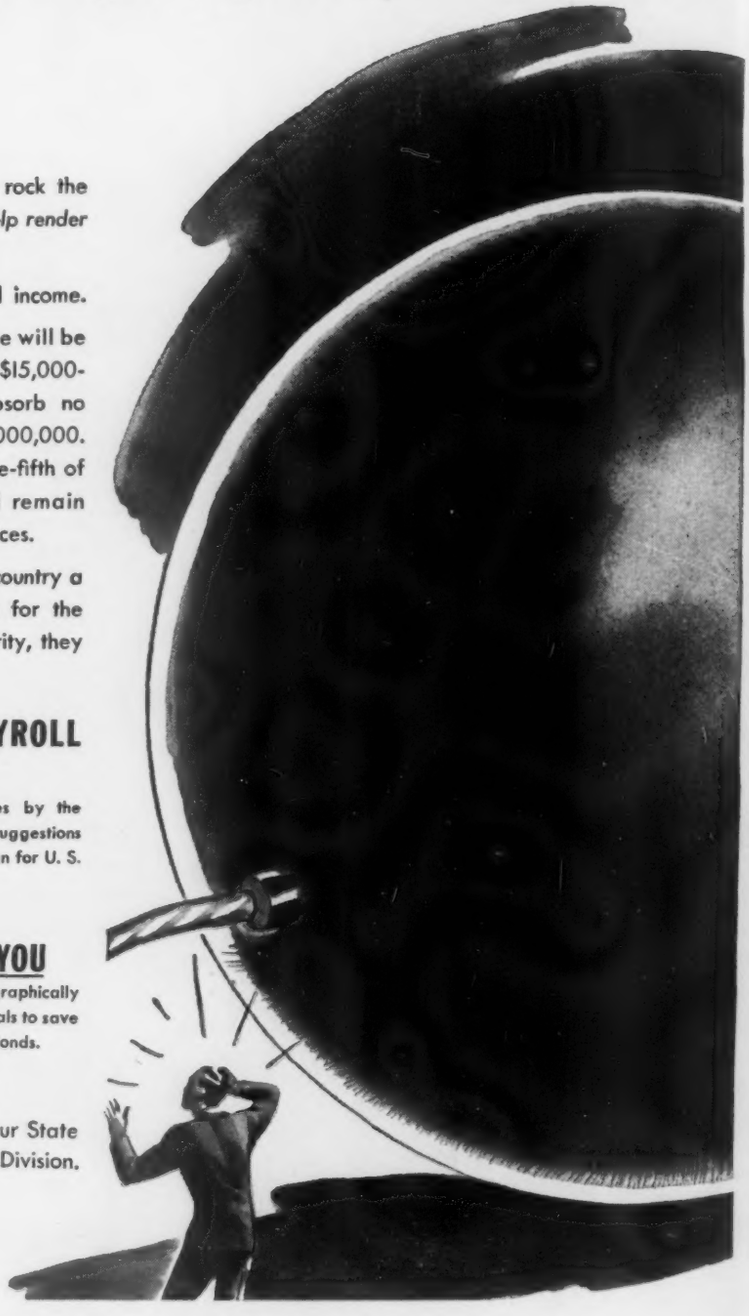


How to Pull the Fuse from a $20,000,000,000 Bomb



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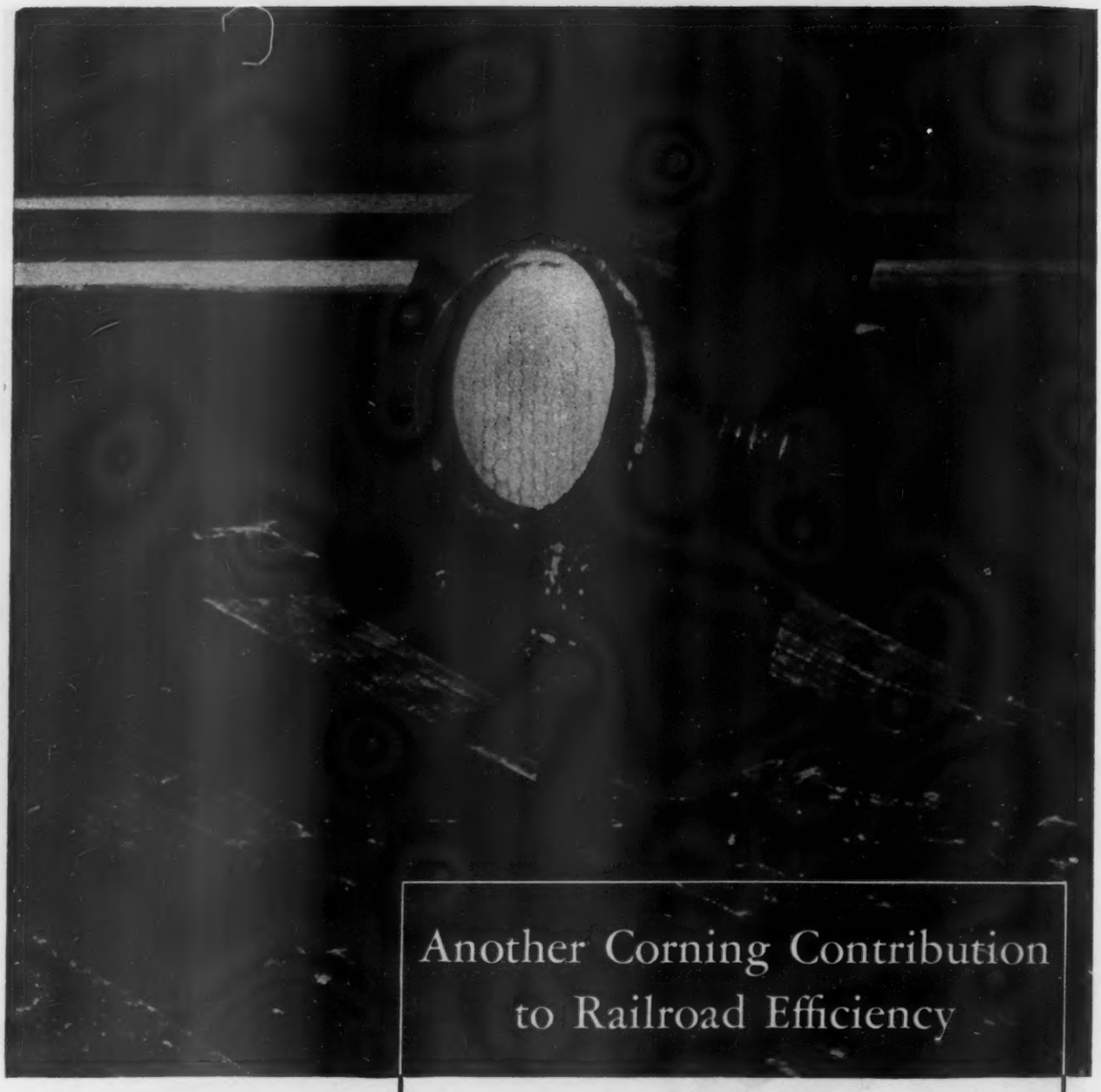
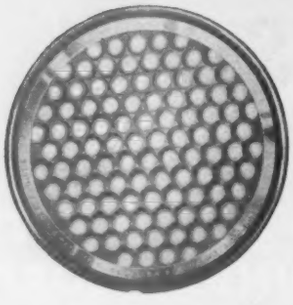


Another Corning Contribution to Railroad Efficiency



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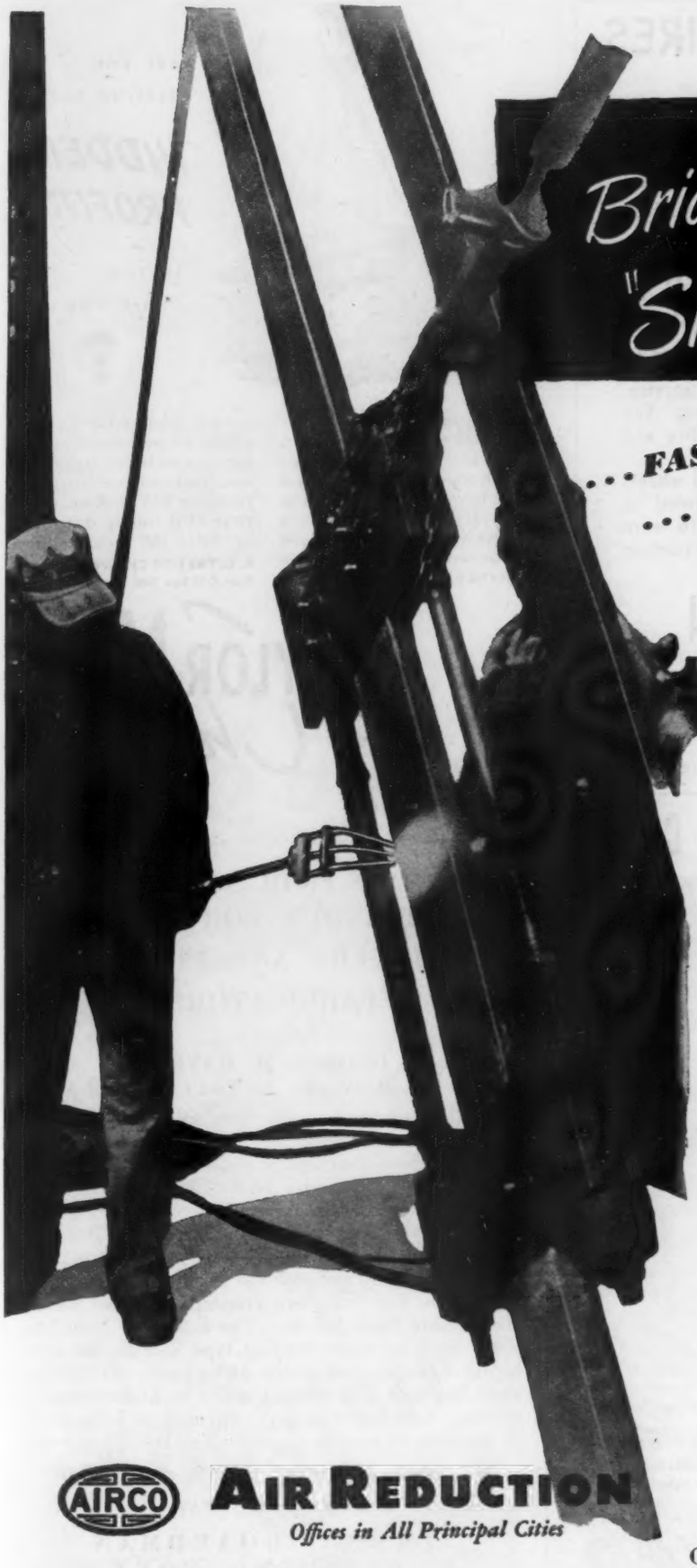

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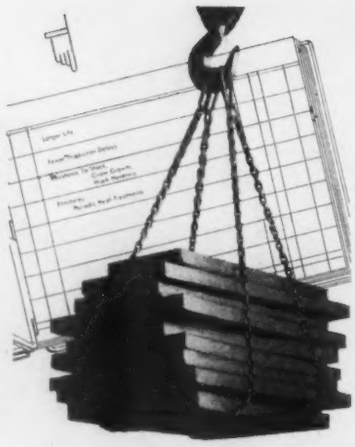

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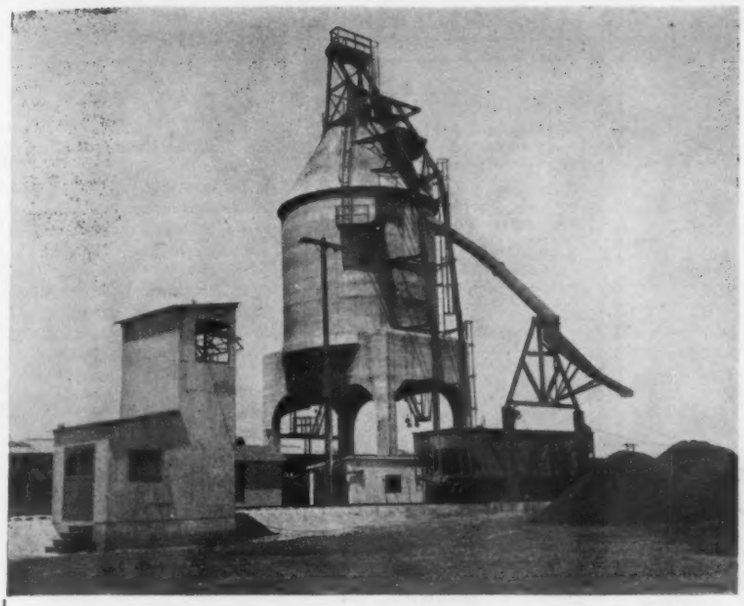

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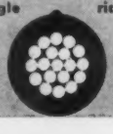

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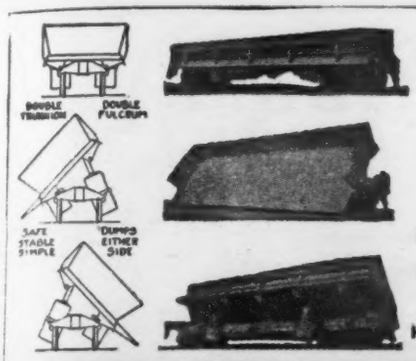

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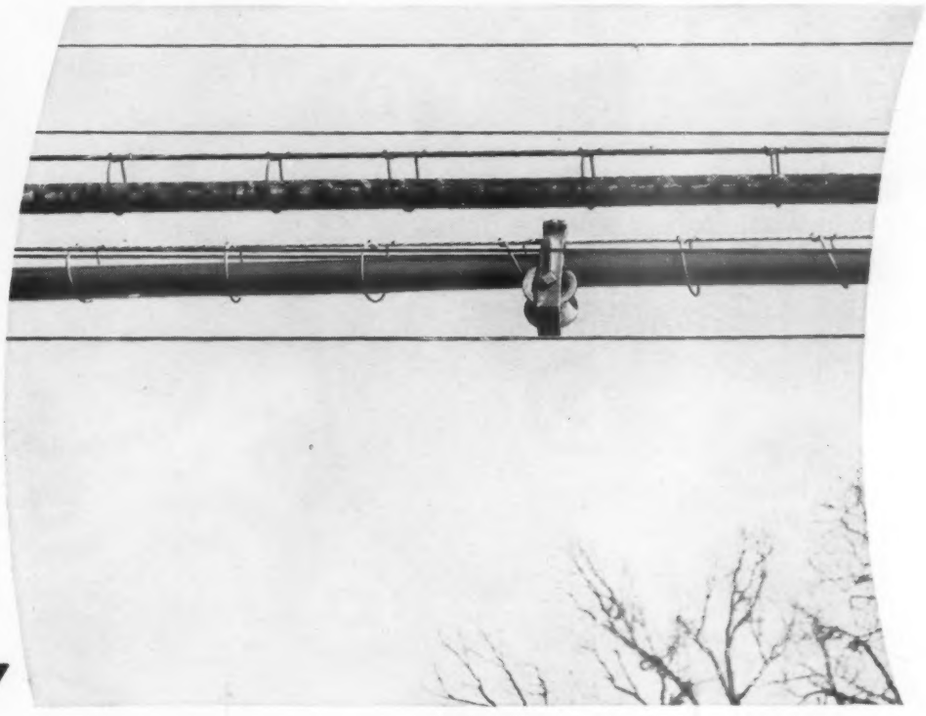

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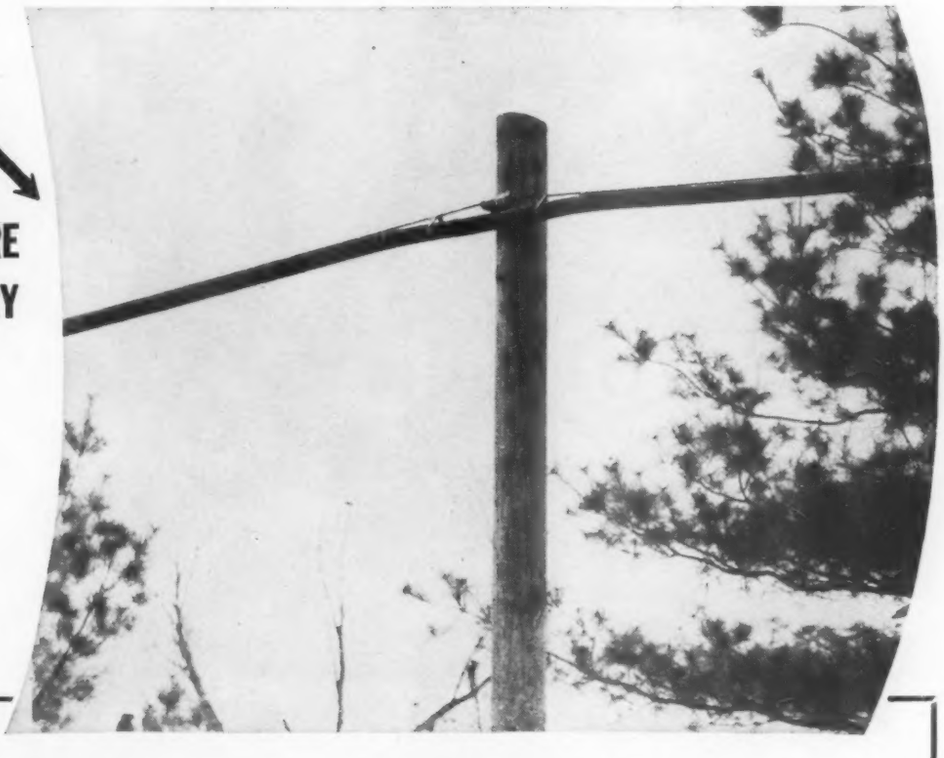

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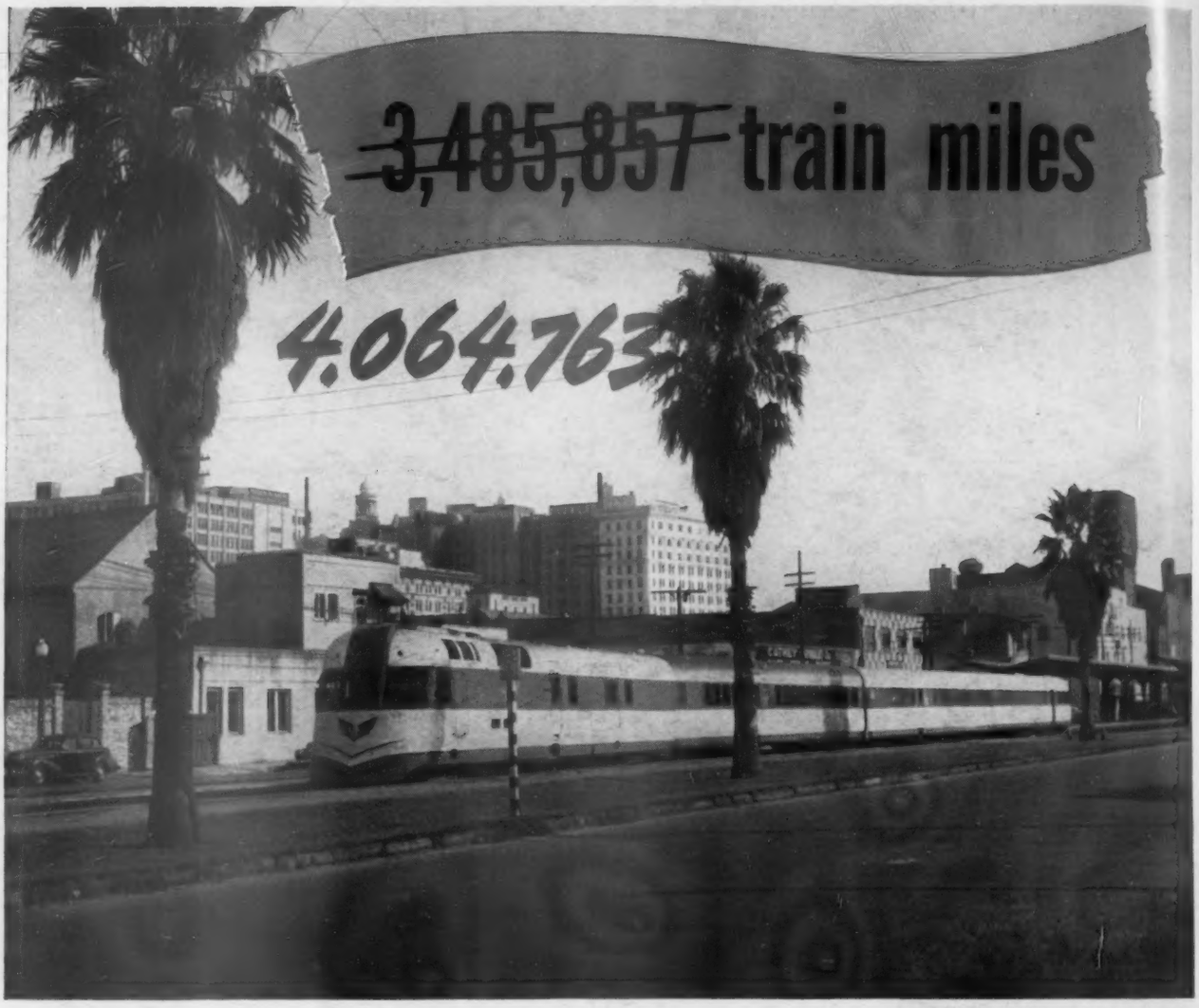

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without a failure due to BEARINGS!

That's the latest record of the New Orleans-St. Louis "Rebel" Diesel-Electric Streamlined Trains of the Gulf, Mobile and Ohio Railroad Co., through ~~September, 1944.~~ This information comes direct from the railroad company which very kindly has granted us permission to publicize it.

There are two of these trains in regular service on the New Orleans-St. Louis run, both equipped with "Quad" type Timken Roller Bearings on all axles.

The photograph shows one of the trains leaving New Orleans.

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April 30, 1946

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This advertisement originally appeared in the December 9th, 1944 issue of Railway Age.